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Profile of Patients with Oral Cavity Cancer Seen at the Department of Ear Nose Throat – Head and Neck Surgery of the Bicol Medical Center

ABSTRACT

Objective: To determine the profile of patients with oral cavity cancer seen at the Ear, Nose and Throat – Head and Neck Surgery (ENT-HNS) Department of the Bicol Medical Center from January 2018 to December 2020.

Methods:

Design: Retrospective review of records

Setting: Tertiary Government Training Hospital

Participants: Medical records of patients with oral cavity lesions with malignant biopsy results seen at the Bicol Medical Center Department of ENT-HNS from January 2018 to December 2020.

Results: Records of 42 patients were included, 30 (71%) male; 12 (29%) female with the mean age of 62 ± 10.02 (range 34 to 80 years old). Squamous cell carcinoma was the most common histopathologic diagnosis (38/42; 91%), mostly affecting the anterior tongue (16/42; 38%) and buccal regions (14/42; 33%). Most tumors were in advanced stages: 25/42 (59%) in stage IVA; 7 (17%) in stage IVB. A total of 61% (17) of 28 oral cavity cancer patients with recorded risk factors practiced a combination of two or three high risk habits (betel nut chewing, tobacco smoking, alcoholic beverage intake) and a third practiced all three (10/28; 36%).

Conclusion: The profile of oral cavity cancer patients in our study is different from the reported profiles in Asia and European and US counterparts. Our profile patient is a married male farmer in the 7th decade of life with poor dental hygiene and advanced stage IV squamous cell carcinoma of the tongue and buccal region, and combined habits of regular alcoholic beverage drinking, chronic tobacco smoking, and/or betel nut chewing, who lives in coastal or mountainous communities where access to health care may be limited.

Keywords: *oral cavity cancer; demographic profile; squamous cell carcinoma; Bicol region*

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Lip and oral cavity cancer is a disfiguring disease associated with high morbidity and mortality, and is known to be a serious public health dilemma.[1,2] South-Central Asia has the highest incidence of lip and oral cavity cancer in the world according to the 2020 estimate by the Global Cancer Observatory (GLOBOCAN).[3] Oral cavity cancer (OCC) ranks 16th in global incidence and has a prevalence of 3.56 per 100,000.[3] In the Philippines, cancer is the third leading cause of morbidity and mortality with oral cavity cancer ranking 19th among the most common cancers.[3,4] The only local statistics available are from the time period of 1980-2007 in Metro Manila and the Rizal Province with incidences of 2.9 and 1.9 (per 100,000) for men and women, respectively.[5]

Different risk factors have been identified and associated in the pathogenesis of OCC. Studies have established the synergistic relationship of tobacco and alcohol consumption as the most important risk factors.[6,7] Asian populations including the Philippines have distinct cultural practices such as betel nut chewing with or without tobacco which have been implicated as strong etiologic factors.[7] Other factors that have been associated with the development of OCC are genetics, poor oral hygiene, chronic trauma due to ill-fitting dentures or pointed teeth, wood dust exposure, lack of vegetables and fruits in the diet, maté leaf drinking, high red meat consumption, and high salted meat consumption.[3,7] Low socioeconomic status, diabetes mellitus type II, and heavy metal exposure were also considered in the complex etiology of OCC.[8] Unfortunately, there is very limited Philippine data for OCC, and to the best of our knowledge, no published data from the Bicol region based on our search of HERDIN Plus, Google Scholar, and MEDLINE (PubMed).

This study intends to determine the profile of patients with OCC seen at the Ear, Nose and Throat – Head and Neck Surgery Department of the Bicol Medical Center from January 2018 to December 2020. Studying the risk factors and the epidemiology of OCC from a regional perspective can help in understanding this disease as variation among populations and/or regions have been reported. This study can also be used to create baseline data for the institution and the region, to identify high risk populations, and to aid in developing programs for future advocacies.

METHODS

With approval of the Bicol Medical Center – Research Ethics Committee (BMC-REC-2021-14) and authorization for data collection by the Chief of Hospital and Head of the Records Section, a retrospective review of records using purposive sampling was started last May 2021. All records of patients seen by the ENT-HNS Department from January 2018 to December 2020 were considered for possible inclusion in the study. Inclusion criteria were patients seen by the ENT-HNS Department with oral cavity mass and confirmed histopathology of OCC. Excluded from the study were patients with oral cavity mass without histopathology results and those with missing records. Data collected included the socio-demographic profile, histopathology report, tumor location, high risk lifestyle habits (smoking, alcohol, betel nut chewing), diet, occupation, dental status and clinical staging based on the American Joint Committee on Cancer *8th edition*.[9] Microsoft® Excel for Mac version 16.66 (Microsoft Corporation, Redmond, WA, USA) was used for tabulating and collating data.

Patient records were assigned codes and anonymized. Descriptive summary measures for continuous variables were analyzed in terms of mean ± standard deviation. Categorical variables were summarized in terms of frequency counts and proportions. Statistical analyses were also performed using Microsoft® Excel for Mac version 16.66 (Microsoft Corporation, Redmond, WA, USA).

RESULTS

There were a total of 48 medical records initially reviewed. Six hospital charts were excluded from the study, four due to missing records, and two lost to follow up for biopsy. Of the 42 remaining records of patients included, 30 (71%) were male and 12 (29%) were female with a ratio of 2.5:1. The population distribution was bell-shaped with mean age of 62 ± 10.02 (range 34 – 80 years old). Most of the patients were married (34/42; 81%). Primary occupations reported were farmers (12/42; 29%) and housewives or housekeepers (8/42; 19%). The municipalities of Iriga and Lagonoy accounted for 12% each of the study population. Most of the patients were clustered in the southern portion of Camarines Sur.

Data on diet preferences were mostly absent (50%) and of those recorded the majority had no food preference (17/42; 40%). Of the 30 available dental records of OCC patients prior to chemo-radiation, 12 (40%) showed presence of multiple dental caries, calculi and soft debris, 11 (36%) had multiple dental caries, while four (13%) were edentulous. Unfortunately, the dental records of twelve patients were not available in the hospital chart as dental records from private dental clinics are not usually brought in by the patients.

Squamous cell carcinoma was the most common histopathologic diagnosis (38/42; 91%). There were two cases of verrucous carcinoma and one spindle cell carcinoma. The most commonly affected anatomic sites were the anterior tongue (16/42; 38%), buccal (14/42; 33%), and lower lip (5/42; 12%). Most of the tumors were in the advanced stages: 25/42 (59%) in stage IVA, 7 (17%) in stage IVB and 3 (7%) in stage III. Seven cases were lacking in information for proper staging. Tumor sizes were more than 4 cm and had invaded adjacent structures or skin of the face (T4a) in 60%, and had extended to either the masticator space,

pterygoid plates, skull base, or encased the internal carotid artery (T4b) in 17%. A third (33%) had nodal metastasis of less than 3cm on bilateral sides of the neck (N2c), and 31% had nodal metastasis on the ipsilateral side (N2b). None of the patients had metastasis detected on chest radiographs.

For the analysis of high risk habits, only 28 charts had recorded details on risk factors. A total of 61% (17) of the 28 OCC patients practiced a combination of two or three of the mentioned high risk habits. Of these, a third of the 28 OCC patients practiced all three combined habits of betel nut chewing, smoking, and intake of alcohol (10/28, 36%), four combined betel nut chewing and alcoholic beverage intake, while three combined betel nut chewing with tobacco smoking. For single users, betel nut chewing was the most common habit (20/28, 71%), followed by alcoholic beverage drinking (17/28, 61%), and tobacco smoking (16/28, 57%). The history of betel nut chewing ranged from 5 to 43 years, smoking history ranged from 5 to 62 pack years, while reported frequencies of alcoholic beverage drinking ranged from occasional to monthly or weekly. Quantity of use or intake was not available for all.

DISCUSSION

Our local profile of OCC patients is different from the reported profile in Asia and European and US counterparts.[6,7] European and US profiles show an elderly man in his 7th decade of life with the most common diagnosis and area as early-stage tongue squamous cell carcinoma whereas the Asian profile is a man in his 5th decade of life afflicted with late-stage lesions of buccal mucosa squamous cell carcinoma.[6,7] The profile of patients with OCC seen by the Department of ENT in Bicol Medical Center in our study is a married male farmer in the 7th decade of life (older than his Asian counterpart) who most likely has combined habits of regular alcoholic beverage drinking, chronic tobacco smoking, and/or betel nut chewing. The profile patient also has poor dental hygiene with a primary tongue lesion, and lives in coastal or mountainous communities where access to health care may be limited.

Different studies have shown that oral cavity cancer was more common in patients between 51 and 70 years old.[4,7,10] This is consistent with our findings of an overall mean age of 62 years, with the most affected groups between 60 – 69 years (36%) and 50 – 59 years (31%) of age.

According to a 2020 social survey, the average age of the Filipino farmer is 59, which places them in the mean age of our study population.[11] This implies a social emergency need to implement an effective program for early detection. Despite health programs and advocacies on the consequences of cigarette smoking (e.g., *Yosi Kadiri*),[12] alcoholic beverage drinking,[13] and betel nut chewing,[13,14] there are pockets in our local population (particularly the farming community) still practicing these high risk behaviors as evidenced in this study. A *post hoc* conversation with a farmer with OCC revealed that betel nut chewing allegedly kept him warm while plowing rice fields which entails being submerged in water up to mid-calf for hours especially during the rainy season. Another one claimed that betel nut chewing helps relieve him of fatigue as he does his manual laborious work while another claimed it makes her teeth strong.

Our OCC population was already in the advanced stage of cancer when received in our institution. The reasons for the delay were not elicited, but according to Sankaranarayana *et al*., delayed health-seeking behavior may be attributed to low socioeconomic status, low educational attainment, and the preference for folk medicine.[3,7] Another possible reason is that diagnosis may be further delayed by the inability to identify early lesions by the patients or by the health care workers in the primary health units.[3] This is significant as the country shifts to Universal Health Care where primary health units are the first line in medical consultation: are they capable of early detection for oral cancer? Delay can also be associated with subsequent late referral to highly specialized facilities.[3]

Our study has several limitations. First, our sample was limited to patients seen at the ENT-HNS Department of the Bicol Medical Center, overlooking patients seen by other departments, in private clinics and in other hospitals in Region V. Second, our study was a review of records only, and not of actual patients. Hence, all our data was at best second-hand. Third, incompleteness of data and inability to quantify details such as the amount of consumption by the examiner and/or the patient may lead to biased estimates. Fourth, there were a lot of inferences due to lack of direct data which can be derived from direct questioning which was not possible for our study. Finally, our sample was very small, even for our institution, and it was not possible to generate any inferences regarding associations among variables, beyond raw frequency counts and percentages.

We recommend further studies that will include the OCC patients seen in other departments and hospitals in the region as well as a more complete and detailed data collection, and to explore other risk factors possibly associated with the disease such as diet, viral etiologies among others which are not routinely inquired or tested in our institution. Future researchers can also include behavioral surveys, treatment outcomes and survival rates of patients diagnosed with OCC. Because our purpose for obtaining a regional profile was to improve our regional cancer care as encouraged in the National Integrated Cancer Control Act,[15] we recommend that even with our limited findings, the Department of Health regional office and Bicol Medical Center consider a targeted program on the prevention and regular monitoring of oral

cavity lesions in farming communities. In addition, capacity building can be conducted among healthcare workers in local health units of the affected municipalities. The Service Delivery Network involving our hospital should be reviewed and the referral system be improved, if necessary.

In summary, our profile of OCC patients is different from the reported profiles in Asia and European and US counterparts. Unlike European and US profiles of an elderly man in his 7th decade of life with early-stage tongue squamous cell carcinoma, or Asian profiles of a man in his 5th decade of life with late-stage lesions of buccal mucosa squamous cell carcinoma, our profile patient is a married male farmer in the 7th decade of life with poor dental hygiene and advanced stage IV squamous cell carcinoma of the tongue and buccal region, and combined habits of regular alcoholic beverage drinking, chronic tobacco smoking, and/or betel nut chewing, who lives in coastal or mountainous communities where access to health care may be limited.

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