Oral Lesions in Elderly Patients in Referral Centers for Oral Lesions of Bahia

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Introduction

The aging population phenomenon is occurring on a global scale; aging affects all of the structures of organisms, including the oral cavity.

Objective To estimate the frequency of oral lesions, according to the clinical and histopathologic diagnoses, and to describe the sociodemographic profile of the elderly treated at the referral centers of oral lesions of public universities in Bahia, Brazil.

Methods A descriptive epidemiologic study with transverse characteristics was conducted with elderly patients between August 2010 and January 2012. A form was used to collect data. The descriptive analysis consisted of calculating the simple and relative frequencies of sociodemographic variables and oral lesions.

Keywords
► epidemiology
► mouth diseases
► elderly
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Abstract

Introduction

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Results The population was predominantly black women, and the minority of elderly people were retired. Fibroid (13%) and squamous cell carcinoma (145%) were more prevalent clinical diagnoses, with squamous cell carcinoma (30.7%) and fibrous hyperplasia more prevalent histopathologic diagnoses.

Conclusion A prevention policy needs to be implemented to reduce new cases of oral lesions in Bahia, Brazil and to aid in early diagnosis and appropriate treatment of oral lesions.

Materials and Methods

A descriptive, cross-sectional, exploratory, census-based epidemiologic study was conducted among the elderly patients
receiving care at the Reference Center for Oral Lesions in interior city of Bahia (BA1) and at the Surgical Pathology Laboratory in capital of Bahia (BA2) in the period from January 2002 to August 2010. The research project was submitted to the Research Ethics Committee in Bahia, Brazil, which granted approval to conduct the research under Protocol No. 022/2011. The authors declare there was no conflict of interests in this research.

The study population consisted of 683 elderly patients at BA1 and 296 at BA2. Individuals aged 60 years or older who had at least one oral lesion were considered eligible for the study. Individuals were excluded from the study if their dental records and biopsy reports had not been filled out properly or were illegible.

A validated form was used to collect data, and the data and the information contained in the biopsy reports/dental records were transcribed. Possible study variables included sociodemographic conditions (sex, age, race/ethnicity, profession, marital status, schooling, place of residence); clinical suspicion; histopathologic diagnosis; localization and clinical characteristics of the lesion; consumption of tobacco, alcoholic beverages, alcoholic beverages and tobacco together; abandonment of smoking and alcoholism; use and type of dental prosthesis; and trauma caused by dental prosthesis. It was only possible to collect data with reference to lifestyle and use of dental prosthesis from the dental record charts, this type of information was missing from the biopsy reports.

After double digitation of the database, statistical analysis was performed by means of the software program R (R Foundation for Statistical Computing, Vienna). The descriptive analysis consisted of calculating the simple and relative frequencies of the sociodemographic variables and of the oral lesions, according to the clinicohistopathologic diagnosis. In this study, only descriptive statistical techniques were used (that is, no tests of statistical analytical inference were performed, because no samples were removed).

Oral lesions were divided into three groups: non-neoplastic lesions, benign neoplastic lesions, and malignant neoplastic lesions, in accordance with the World Health Organization (WHO) classification. Therefore, the frequencies of these groups of lesions were verified in the studied population for clinical suspicion and for histopathologic diagnosis.

In Bahia, there are three dentistry courses at public universities; however, in only two are there reference centers for oral lesions, which are consolidated with higher learning institutions (BA1 and BA2) and which provide diagnostic services, treatment, and health promotion free of charge to the Bahia population. These centers are also the teaching institutions for future professionals in the health area, and professional are available to patients full-time.

Results

Sociodemographic Profile

At BA1, 683 lesions in elderly patients were identified, with 447 being in women and 236 in men (1.9:1). There was predominance of ages ranging between 69 and 100 years (52.7%), and the mean age was 70.12 years (standard deviation [SD] = 7.88). Over half the elderly patients (55.1%) did not have companions. Using the classification proposed by the IBGE (Brazilian institute for geography and statistics) for race/ethnicity, 190 (31.1%) individuals were found to be mixed race, 164 (26.8%) white, 256 (41.9%) black, and 1 (0.2%) Asian.

Occupationally, 33.6% of the sample were retired, 26.7% were urban workers (with greater emphasis on housewife and domestic professions), and 39.7% were rural workers.

The majority of the subjects were illiterate (39.5%) and had incomplete primary schooling (37.2%). Of the patients, 506 (76.4%) related that they lived in municipalities surrounding the BA1 installations (Table 1).

The information about smoking an alcoholism was not filled out in only two record charts; 143 (21%) were smokers only, 48 (7%) consumed alcohol only, 262 (38.5%) were smokers and consumed alcohol, and 228 (33.5%) did not use either of the two substances.

No information was found in 14 (2.1%) record charts regarding the use of dental prosthesis, and 340 (50.8%) of the elderly patients made use of some type of denture, but with reports of trauma in 197 (70.9%). The type of denture most frequently identified in these patients was the complete type (73.3%), followed by the removable partial denture (17%).

Information was lost about the following variables: marital status, race/ethnicity, occupation, schooling, place of residence, alcohol and tobacco consumption, and use and type of dental prosthesis.

At BA2, 305 biopsy reports were collected; however, 9 were in common with those of BA1. The clinical exam was performed in the latter institution and sent to the former only to obtain the histopathologic results of the biopsies up to the middle of 2006. Therefore, BA2 was excluded from these charts to prevent duplication of data.

The number of elderly patients eligible for the study at BA2 totaled 296, 194 women and 102 men (1.9:1). Predominance was observed of the younger age groups (60 to 68 years: 57.1%), and the mean age was 68.73 years (SD = 6.74). Of the patients, 102 (41.5%) were married, 76 (30.9%) were single, 4 (1.63%) were separated, and 64 (26%) were widowed. The majority identified as being black (47.6%).

Occupationally, 85 (35.1%) were retired, 132 (54.5%) were urban workers (with greater emphasis on housewife and domestic professions), and 25 (10.3%) were rural workers. From the data with reference to place of residence, 64.3% of the elderly came from surrounding cities to the reference center for oral lesions of BA2 (Table 1).

No information was obtained about schooling and lifestyle (alcohol and tobacco consumption, use of dental prosthesis) on the biopsy reports. Information was lost about the following variables: marital status, patients’ race/ethnicity, and place of residence. However, the latter variable had the highest losses (85.8%), for which only 42 responses were obtained, 26 of which were from women.

Characteristics of Oral Lesions

Using the WHO (2005) classification and by means of clinical exam, at BA1, non-neoplastic lesions were identified in 318
elderly patients (51.8%). Among the oral lesions identified, squamous cell carcinoma was the most prevalent clinical suspicion (14.5%), followed by leukoplakia (8.8%), hemangioma (8.1%), fibroma (7.3%), and prosthetic stomatitis (6.7%), as shown in Table 2. Of the record charts, 614 were duly filled out with identification of a supposed oral lesion and 69 record charts contained information about changes in normality of the oral mucosa.

However, at BA2, non-neoplastic oral diseases were identified by clinical exam in 187 (67.3%) biopsy reports, and malignant neoplasias were suspected in 10.8% of the biopsy reports. Among the oral lesions characterized at this reference center by clinical suspicion, fibroma was the most prevalent (13%), followed by fibrous hyperplasia (10.2%), squamous cell carcinoma (10.2%), and leukoplakia (6.7%; Table 2). By the findings of the clinical exam, the prevalence of 32.7% of neoplastic lesions was identified.

When analyzing the findings of the histopathologic exam, at BA1 194 elderly patients had biopsies, but there was no record of the biopsy result on the records of 2 of the patients. Of the cases diagnosed, 83 (44.1%) were not neoplasias and 68 (36.2%) were malignant neoplasias. Table 3 shows that there was a prevalence of 30.7% of cases of squamous cell carcinoma, followed by hyperkeratosis (10.4%), fibrous hyperplasia (7.3%), and hemangioma (6.8%). In the elderly population of BA1, the prevalence of oral cancer was 36.2% per histopathologic exam.

At BA2, benign neoplastic lesions were found in 44 (16.2%) biopsy reports and malignant neoplastic lesions were present in 40 biopsy reports. There were 24 descriptive and/or inconclusive histopathologic results. Fibrous hyperplasia was the most prevalent oral lesion (24%), followed by squamous cell carcinoma (8.8%), hyperkeratosis (6.8%), and fibroma (5.1%; Table 3). The prevalence of non-neoplastic diseases was 69.1%, diagnosed in 188 biopsy reports. In the elderly population at BA2, the prevalence of oral cancer was 14.7%, proved by the histopathologic exam.
Table 2 Frequencies of the most prevalent oral lesions according to clinical suspicion in the elderly patients treated in referral centers for oral lesions in public universities of Bahia (BA1 and BA2) from January 2002 to August 2010

| Oral lesion                  | BA1 (n = 614) | BA2 (n = 284) |
|------------------------------|---------------|---------------|
| n   | %   | n   | %   |
| Squamous cell carcinoma      | 89            | 14.5          | 29            | 10.2          |
| Prosthetic stomatitis        | 41            | 6.7           | 0             | 0             |
| Fibroma                      | 45            | 7.3           | 37            | 13.0          |
| Pyogenic granuloma            | 12            | 2.0           | 13            | 4.6           |
| Hemangioma                   | 50            | 8.1           | 1             | 0.4           |
| Fibrous hyperplasia           | 36            | 5.9           | 29            | 10.2          |
| Leukoplakia                   | 54            | 8.8           | 19            | 6.7           |
| Lichen planus                 | 16            | 2.6           | 6             | 2.1           |
| Mucocele                      | 17            | 2.8           | 5             | 1.8           |
| Actinic cheilitis             | 31            | 5.0           | 1             | 0.4           |
| Traumatic ulcer               | 16            | 2.6           | 2             | 0.7           |

Abbreviations: BA1, Reference Center for Oral Lesions in interior city of Bahia; BA2, Surgical Pathology Laboratory in capital of Bahia.

Table 3 Frequencies of the most prevalent oral lesions according to histopathologic results in elderly patients treated in referral centers for oral lesions in public universities of Bahia (BA1 and BA2) from January 2002 to August 2010

| Oral lesion                  | BA1 (n = 188) | BA2 (n = 296) |
|------------------------------|---------------|---------------|
| n   | %   | n   | %   |
| Squamous cell carcinoma      | 59            | 30.7          | 26            | 8.8           |
| Fibroma                      | 5             | 2.6           | 15            | 5.1           |
| Pyogenic granuloma            | 5             | 2.6           | 7             | 2.4           |
| Hemangioma                   | 13            | 6.8           | 1             | 0.3           |
| Hyperkeratosis                | 20            | 10.4          | 20            | 6.8           |
| Fibrous hyperplasia           | 14            | 7.3           | 71            | 24.0          |
| Lichen planus                 | 2             | 1.0           | 3             | 1.0           |
| Mucocele                      | 3             | 1.6           | 1             | 0.3           |
| Inflammatory process          | 4             | 2.1           | 14            | 4.8           |
| Actinic cheilitis             | 3             | 1.6           | 2             | 0.7           |
| Descriptive report            | 4             | 2.1           | 23            | 7.8           |

Abbreviations: BA1, Reference Center for Oral Lesions in interior city of Bahia; BA2, Surgical Pathology Laboratory in capital of Bahia.

Table 4 Frequencies of the anatomical location of oral lesions in elderly patients treated in referral centers for oral lesions in public universities of Bahia (BA1 and BA2) from January 2002 to August 2010

| Anatomic location                  | BA1 (n = 653) | BA2 (n = 289) |
|-----------------------------------|---------------|---------------|
| n   | %   | n   | %   |
| Labial commissure                 | 24            | 3.6           | 1             | 0.3           |
| Lip                               | 97            | 14.7          | 25            | 8.7           |
| Tongue                           | 86            | 13            | 25            | 8.7           |
| Mandible                         | 15            | 2.3           | 40            | 13.8          |
| Jugal mucosa                      | 103           | 15.6          | 45            | 15.6          |
| Palate                            | 156           | 23.6          | 28            | 9.7           |
| Alveolar ridge                    | 67            | 10.2          | 52            | 18            |
| Floor of the mouth                | 38            | 5.8           | 9             | 3.1           |

Abbreviations: BA1, Reference Center for Oral Lesions in interior city of Bahia; BA2, Surgical Pathology Laboratory in capital of Bahia.

For identification of the anatomic location of the lesion, at BA1 the charts of only 23 individuals did not contain this information. The most prevalent location of the oral lesion was the palate (23.6%), jugal mucosa (15.6%), lip (14.7%), tongue (13%), and alveolar ridge (10.2%). At BA2, only 8 biopsy reports did not contain identification of the oral lesion location. At this institution, the alveolar ridge was the most prevalent location for oral lesions in 52 (18%) biopsy reports, followed by the jugal mucosa (15.6%), mandible (13.8%), palate (9.7%), lip (8.7%), and tongue (8.7%; Table 4).

Discussion

Epidemiologic studies may promote an important view for the understanding of the prevalence, extent, and severity of oral diseases in the aging population. Nevertheless, there are still a limited number of studies in the literature addressing diagnosis and identification of the prevalence of lesions in the oral mucosa of the elderly population; when oral lesions are the object of the study, the focus is only on cancer of the mouth.7

A predominance of the female sex is observed among the data available, as in the present study.1,8–18 This fact is characterized by IBGE as feminization of the elderly population,19 explained by the differences in survival between the sexes; on average, women live 8 years longer than men. In addition, women show greater fidelity to preventive and educational programs, in addition to making more demands on the outpatient health services than men.20

There was no uniformization as regards age groups at the two centers of the research. The most affected age group at BA1 was between 69 and 100 years, which is in agreements with the studies of Ferreira et al13 and Carvalho et al.14 The group of elderly patients growing most rapidly in Brazil is that of persons aged 80 years and over.21 However, Corrêa et al found a greater prevalence of oral lesions in younger elderly patients, as was found in the study conducted at BA2.18

The majority of the population in the present study was single, separated, or widowed, which is in agreement with other studies.13,19 The data of this study led to the understanding that the chances of women facing the decline in physical and mental capacity without the support of a
The large proportion of completely edentulous subjects reflects the history of dentistry over the past 80 years in Brazil, where extractions were indicated by doctors and dentists as a prophylactic measure for systemic diseases based on the theory of focal infection. The literature depicts a diversity of nomenclature for oral lesions and study methodologies when the object is oral lesions in the elderly, thereby making it difficult to compare data. Therefore, standardization of these criteria is needed to enable better evaluation of the oral health conditions of the elderly.

For oral lesions identified only by clinical exam, at BA2 fibroma (13%) was the most prevalent, which differs from results by other researchers, who identified fibrous hyperplasia as the most prevalent oral lesion in these studies. At BA1, differently from the other center, squamous cell carcinoma (14.5%) was most prevalent among the oral lesions when it was suspected only in the clinical exam.

Only in the study conducted at BA1 was information verified on the record charts about smoking and/or alcohol consumption. The majority of the patients were both smokers and alcohol consumers (38.5%), 21% of the elderly were smokers only, and 33.5% of them had neither of these habits of life. These findings referring to the greater increase in smoker and alcohol consumer patients corroborate the findings of Batista et al., who showed that smoking and alcohol consumption were the most prevalent habits (48.8%). Dentures were worn by 340 (50.8%) of the subjects, with complete dentures (73.3%) being the most prevalent, in agreement with other researchers. The large proportion of completely edentulous subjects reflects the history of dentistry over the past 80 years in Brazil, where extractions were indicated by doctors and dentists as a prophylactic measure for systemic diseases based on the theory of focal infection. The literature depicts a diversity of nomenclature for oral lesions and study methodologies when the object is oral lesions in the elderly, thereby making it difficult to compare data. Therefore, standardization of these criteria is needed to enable better evaluation of the oral health conditions of the elderly.

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When the biopsy was performed, diagnosis of the lesion could be proved by the histopathologic exam. Thus, at BA2 the highest prevalence was shown for fibrous hyperplasia (24%), followed by squamous cell carcinoma (8.8%), corroborating the studies conducted by Carvalho et al. and Corrêa et al. in which fibrous hyperplasia was the most prevalent oral lesion in the biopsies performed in elderly patients. Despite not having data at BA2, it is known that the majority of the elderly patients wear dentures, as a consequence of the era of mutilation in dentistry; therefore, it is suggested that in the elderly, the greater predominance of fibrous hyperplasia is associated with prosthetic trauma. At BA1, squamous cell carcinoma (30.7%) continued to be the most prevalent lesion by this method of diagnosis, followed by the non-neoplastic lesions (hyperkeratosis and fibrous hyperplasia) and hemangioma. These data emphasize the importance of the correct procedure for the diagnosis of oral lesions, because there is increasing incidence of oral cancer in Brazil, which is ranked the fifth most frequent type of cancer among men and seventh among women when this lesion is detected early, it presents a higher survival rate than the other types of cancer.

There was no uniformization of anatomic location at the studied centers, despite both centers showing equal frequencies for lesions of the jugal mucosa. In the elderly cared for at BA1, the palate (23.6%) was the most prevalent location of the lesions, as it was in the study of Hidalgo et al. This differed from the finding at BA2, where the most prevalent oral location was the alveolar ridge (18%).
Epidemiologic studies of a descriptive nature help with evaluation of the oral health of elderly patients; the incidence and prevalence of diseases in the oral mucosa are important parameters for helping with strategies to improve the oral health of this population. However, some of the limitations of this study should be pointed out, such as the faithfulness of the data collected and failures in filling out the record charts and biopsy reports, because the clinical exam is a subjective act and the knowledge of the student/professional is implicit; in addition, different examiners filled out the record charts. After all, these reference centers for oral lesions form part of higher learning institutions, where there is a constant search for the improvement of knowledge and diversity of knowledge and ways to see reality.

The data obtained must not be envisaged as representative of the elderly population in general, because the study was conducted at services whose conclusion obtained must be directed only toward the population assisted. Moreover, many diseases that occur in this are range are diagnosed by their clinical expression (history, signs and symptoms) from observational data and without therapeutic proof. Other factors that deserve emphasis are the possible interferences in the expression of the diseases that translate into greater or less exposure to causal factors, whose prevalence varies geographically.

The change in the population structure gives rise to changes in approach and planning of dental treatments. The increase in the contingent of elderly patients needs adequate support in the public health system, as they may suffer aggravation of their health conditions, frequently connected with aging, such as the accumulation of sequelae of many diseases that occur in this range are diagnosed by the centers.

The results of the present study direct dentists toward more careful clinical exam of elderly patients, in addition to the development of educational activities, with emphasis on self-exam for early detection of oral lesions.

Further research is necessary to elucidate some of the findings of this study, in addition to serving as a basis for future analytical studies. The data suggest the need for implementation of a policy of prevention and control of oral lesion in Bahia, to make it feasible to reduce the incidence of new cases and aid in early diagnosis and adequate treatment of oral lesions.

Conclusion

In the epidemiologic survey of oral lesions in elderly patients conducted at the centers of reference of public universities in Bahia, Brazil over a period of 8 years, fibrous hyperplasia and squamous cell carcinoma were the oral lesions most frequently diagnosed in the histopathologic exam, despite fibroma and squamous cell carcinoma being more frequently identified in the clinical exam. There was a higher proportion of women than men, and black and elderly patients without companions were the most prevalent sociodemographic data at the centers.

The results of the present study direct dentists toward more careful clinical exam of elderly patients, in addition to the development of educational activities, with emphasis on self-exam for early detection of oral lesions.

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