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Prevalence and characterization of oral lesions in the Stomatology Clinics of the Piquet Carneiro Polyclinics 12-Year Retrospective Study

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• Conflicts of interest: none declared.

Abstract

Objective: to evaluate the prevalence of the main types of lesions submitted to biopsy and to identify the profile of patients attended at the Stomatology Clinics of the Piquet Carneiro Polyclinics (PPC/UERJ, Rio de Janeiro) between 2000 and 2012. **Material and methods:** this is a cross-sectional and retrospective study in which medical records of 2,078 patients were evaluated and data referring to diseases, age, sex, skin color and anatomical location of the lesions were collected and analyzed descriptively. **Results:** A total of 69% of patients (1,441 cases) obtained the conclusive diagnosis by histopathological examination, whereas 31% (637 cases) obtained a descriptive histopathologic report. Of the cases with conclusive histopathological diagnosis, 58% were women, 31% were men and 11% did not inform their sex. The mean age of the studied population was 50.63 years and in 58% of the cases the patients had light skin. The largest number of lesions were from non-neoplastic proliferative processes, and the inflammatory fibrous hyperplasia (30.1%) was the most prevalent. **Conclusion:** the epidemiologic profile of patients attended during the study period consisted predominantly of women over 50 years of age and the most prevalent oral injury was inflammatory fibrous hyperplasia. This study reinforces the importance of the histopathological analysis as a diagnostic auxiliary method that enables the elaboration of specific strategies for prevention and early detection of the most frequent oral diseases in the population.

Keywords: Oral diseases; Oral lesions; Epidemiology; Oral medicine; Biopsy.

Introduction

When examining the patient, the dental surgeon often identifies tissue alterations or lesions in the oral cavity and in the maxillofacial complex that – sometimes due to the absence of pathognomonic characteristics, sometimes due to the rarity of the condition – preclude the establishment of a clinical diagnosis. This procedure requires complementary examinations for confirmation of clinical hypothesis or achievement of a definitive diagnosis, such as histopathological analysis of the tissue obtained through biopsy.[1-4] The biopsy procedure implies the removal of healthy and altered tissue for microscopic analysis, being the only method, in some situations, capable of diagnosing unknown lesions or disorders, besides being the gold standard for conditions such as malignant neoplasms, since it provides crucial information that complements the diagnosis and guides the treatment.[5,6]

The epidemiological survey of the diseases affecting the oral and maxillofacial complex is of crucial importance to dental clinics because it allows to trace the population profile and the most prevalent diseases, grounds the creation of more effective therapeutic protocols and directs studies for conditions where pathogenesis and therapy have not yet been fully clarified. Unfortunately, only a few studies inform the relative frequency or prevalence of conditions and include demographic data, histopathological diagnosis and anatomical location of the lesions.[6-8]

Only some centers specialized in Oral Diagnosis integrated to public and/or private universities have sought to identify the prevalence of injuries and the profile of patients undergoing biopsies in their respective ambulatories; however the data is scarce in general. In this context, the biopsy, besides being an individual diagnostic method, provides data that allows the identification of the most prevalent conditions in that population, subsiding the elaboration of specific strategies for prevention and treatment.[5-9]

In this context, this study aimed to evaluate the prevalence of the main types of lesions submitted to biopsy and to identify the profile of patients attended at the Stomatology Clinics of the Piquet Carneiro Polyclinics (PPC/UERJ, Rio de Janeiro) between 2000 and 2012.

Material and Methods

Ethical Considerations

This study was submitted and approved by the Research Ethics Committee of the Hospital Universitário Pedro Er-

nesto, Rio de Janeiro State University, under Protocol No. 2540/0078.0228.000-09.

Survey Data Collection

This is a cross-sectional and retrospective study in which 2,078 medical records of patients attended between 2000 and 2012 in the Stomatology Specialization Clinics of the Rio de Janeiro State University (UERJ) were selected. Based on the histopathological diagnosis of each case, the prevalence of the lesions was evaluated, associating them with data such as sex, age, skin color (light skin and dark skin) and anatomical localization. Inclusion and exclusion criteria of the study participants are described in Table 1.

Lesions with conclusive diagnosis through histopathological examination were categorized in different groups, according to their nature, as illustrated in Table 2.

The information collected was tabulated in Microsoft Office Excel 2007, descriptively analyzed in relation to demographic data and the lesions were classified according to their histopathological characteristics. Subsequently, the percentage mean and standard deviation of the studied variables and the lesions found in the sample were calculated.

Results

Between 2000 and 2012, 2,078 biopsies were performed in the Stomatology Service of Piquet Carneiro Polyclinics, and in 69% (1,441 cases) a conclusive report was obtained through histopathological examination, whereas in 31% (637 cases) the report was descriptive (Figure 1).

Regarding the profile of patients with conclusive histopathological diagnosis, 58% were females, 31% were males and 11% presented no sex record (Figure 2). The mean age of the population studied was 50.63 years (±19.5), with age limits ranging from 6 months to 100 years; the mean age found among women was 52.80 years (±12.3), and among men, 48.40 years (±13.6). In 58% of cases, the patients declared white skin color, 31% non-white, and in 11% the patients did not report their skin color (Figure 3).

The anatomical localization site of the lesions with confirmed histopathological diagnosis was in most cases the buccal mucosa (21%), alveolar ridge (15%), lip (15%), tongue (15%), and palate (9%). It is important to emphasize that for this analysis, the regions of the upper and lower lips were considered as a single site (Figure 4). The microscopic findings varied and covered 108 different diagnoses, which were grouped according to their histopathologic nature.

The most frequent lesions were non-neoplastic proliferative processes, a group that presented the most prevalent conditions for inflammatory fibrous hyperplasia (30.1%), pyogenic granuloma (4.5%) and peripheral ossifying fibroma (1.0%). Squamous cell carcinoma (7.91%), classified as epithelial lesion, was the most prevalent in its group (Figures 5 and 6). The phenomenon of mucus extravasation/retention, present in 5.1% of cases was the most diagnosed condition among sialoadenopathies, whereas lichen planus, classified as a dermatological inflammatory lesion, was the most prevalent with 3.40% (Figures 5 and 6). The prevalence of each lesion, disregarding those with fewer than twelve cases registered, grouped and categorized as "Other Diseases of the Oral Mucosa", is shown in Figure 5.

Table 1. Description of the inclusion and exclusion criteria in the study

Inclusion criteria	Exclusion criteria
• Age equal to or above 18 years with clinical diagnosis confirmed by histopathological examination. • Patients under 18 years of age who were diagnosed by histopathological examination were under the consent of their guardians for their inclusion in the study by signing the informed consent form. • To be enrolled in the Stomatology Clinic, as well as have a complete medical record.	• Participants with intellectual or non-collaborative difficulties and/or non-compliance with the proposed protocol; • Incomplete medical records and absence of histopathologic examination; • Patient without a medical record with a duly signed informed consent form.

Table 2. Distribution of the lesions according to their pathological nature

Schematic Classification of Pathologies Found in the Oral and Maxillofacial Complex	
Soft-Tissue Tumors	Bone Pathology
Granulomatous Lesions	Dermatological Diseases
Epithelial Lesions	Odontogenic Cysts and Tumors
Non-Odontogenic or Developmental Cysts	Salivary Gland Pathology
Injuries by Viral and Physical	Non-Neoplastic Proliferative Processes
Injuries by Chemical Agents	Hematological Disorders

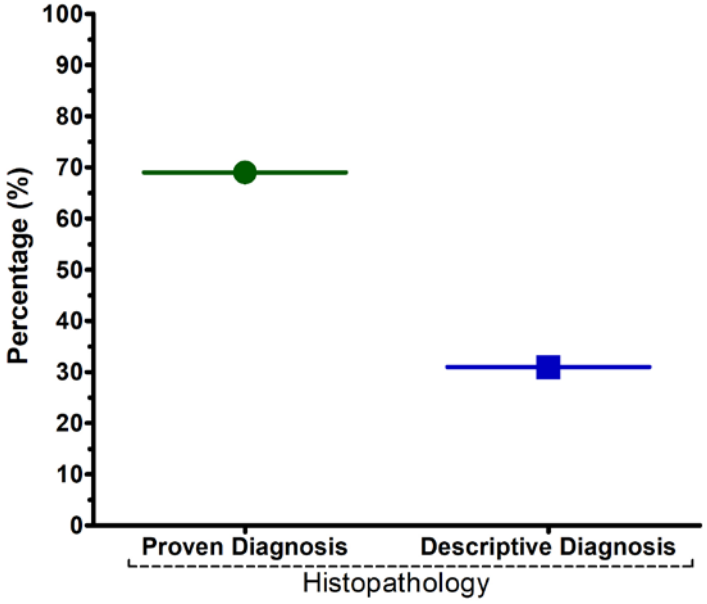

Figure 1. Prevalence and characterization of histopathologic examination results

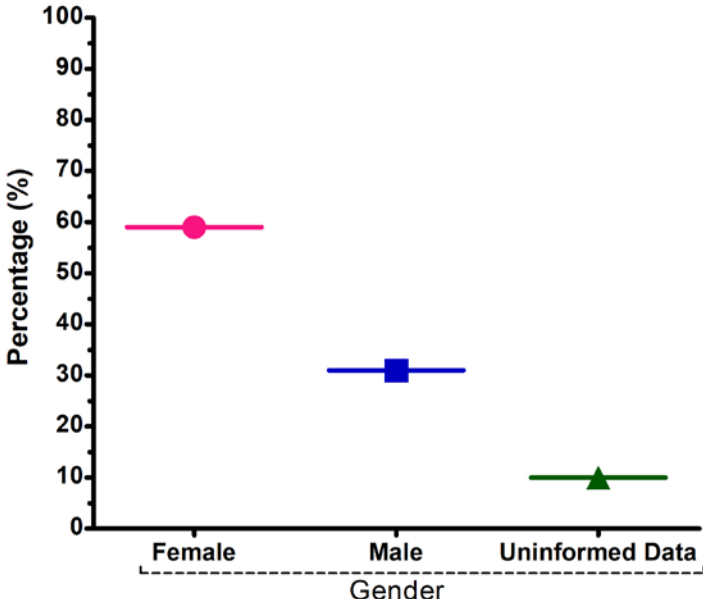

Figure 2. Distribution and characterization of the sex described in the study

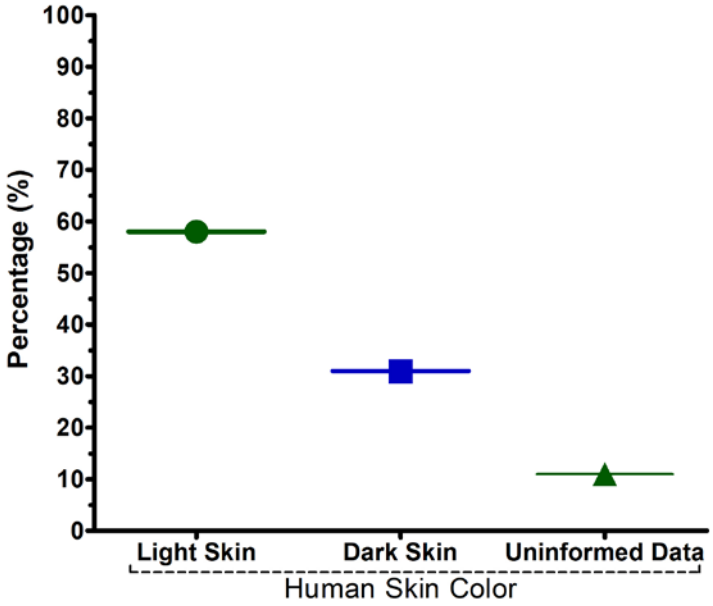

Figure 3. Distribution and characterization of the skin color described in the study

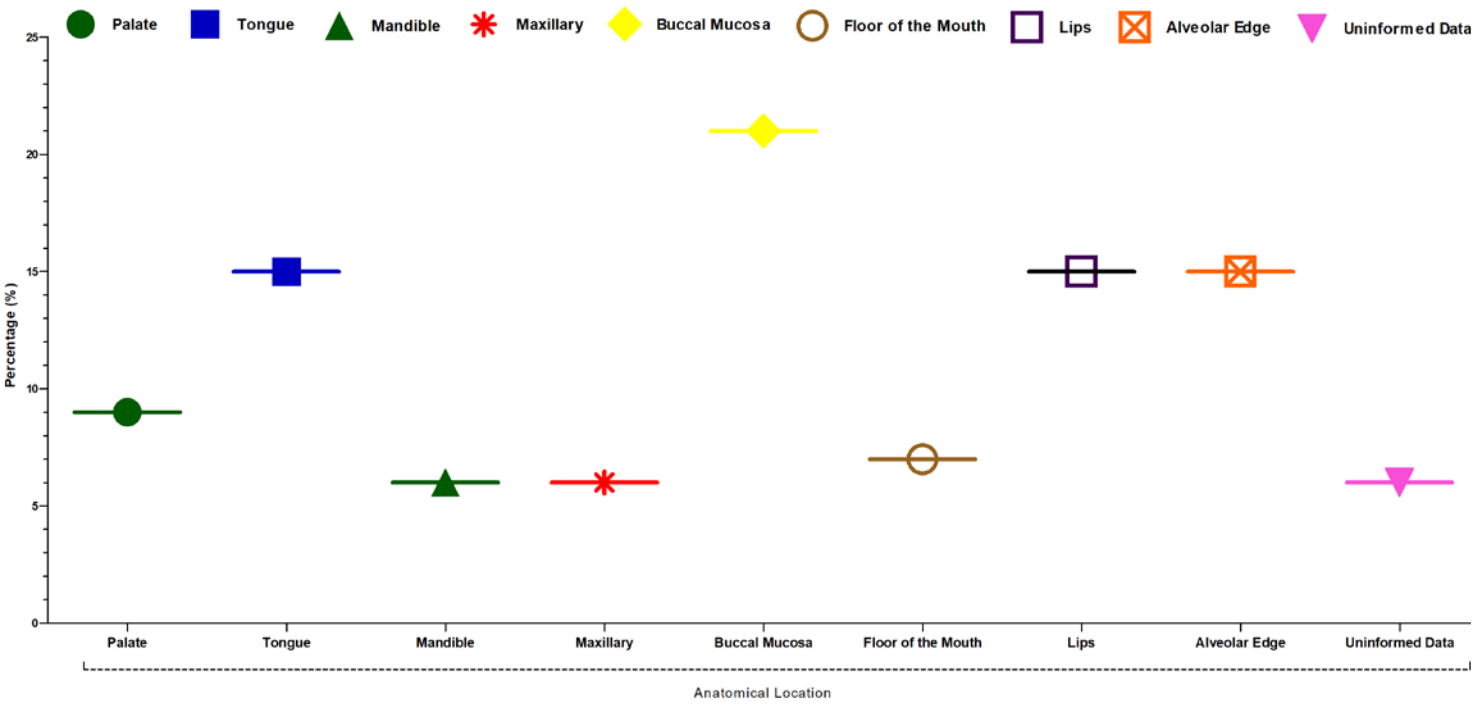

Figure 4. Prevalence and characterization of anatomical localization of lesions with conclusive histopathological diagnosis

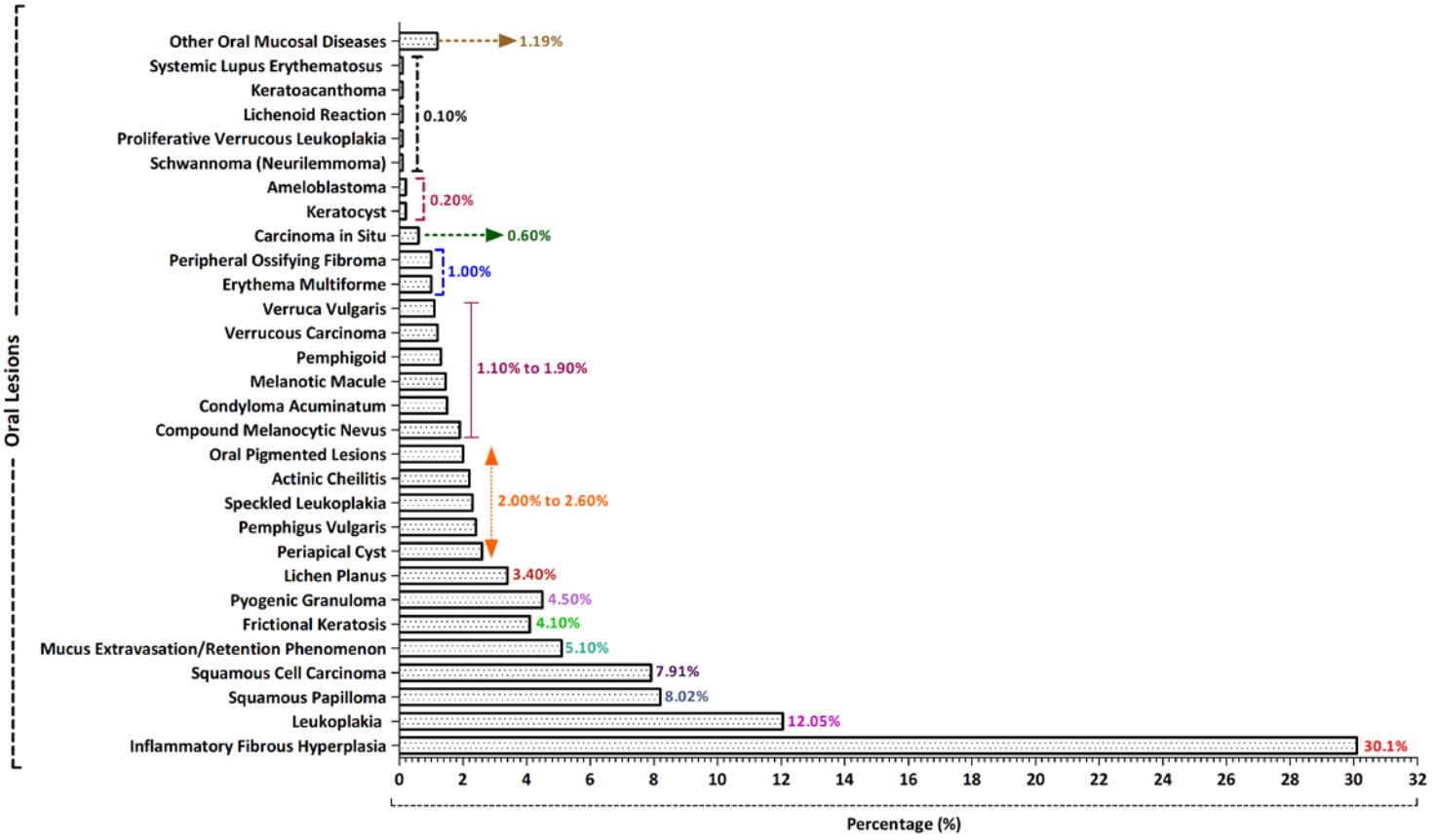

Figure 5. Distribution of the most prevalent lesions found in the sample studied

Figure 6. Clinical aspect of oral soft tissue lesions found in oral cavity. "A" presents an irregular nodule located in a vestibule background associated with trauma with conclusive diagnosis of Focal Fibrous Hyperplasia (Traumatic Fibroma). The illustrations "B" (tongue), "H" (lips) and "M" (tongue) present distinct clinical aspects of the Oral Lichen Planus. "C" and "E" present an Erythroplasia with macular characteristic of red color, well circumscribed, bright, with granular surface, well delimited, asymptomatic, in the mucosa of soft palate and jugal mucosa, respectively. The main immunologically-mediated dermatomucosal diseases are shown in "D" and are represented by the Pemphigus Vulgaris. This is characterized by ulcerations throughout the oral mucosa and present an important clinical characteristic, the Desquamative Gingivitis. "G" shows the Pemphigoid characterized by ulcerated, painful and bleeding lesions in the gingival mucosa. "F" shows the main salivary gland lesion, called mucus retention/extravasation phenomenon, the Mucocele. Illustration "I" presents in the lower lip an ulcer that is bleeding, symptomatic and with crusts, a condition called Erythema Multiforme which is usually associated with a hypersensitivity reaction in response to an infection. "J" shows the Exophytic Nodule in gingiva inserted with diagnostic conclusion of Peripheral Ameloblastoma. "K" shows an exophytic nodule in the apex of the tongue with a diagnostic conclusion of squamous papilloma. "L" presents a developmental alteration called Oral Pigmented Lesion (Physiological Melanosis) located throughout the gingival extension. "N" shows irregular exophytic nodule in inferior alveolar ridge associated with the maladapted partially removable prosthesis with diagnostic conclusion of inflammatory fibrous hyperplasia. Illustration "O" presents a Squamous Cell Carcinoma represented by a deep, irregular, red, bleeding ulcer, exhibiting areas of necrosis, with elevated and hardened edges, poorly delimited, symptomatic in inferior alveolar ridge mucosa, and extending to the floor of the mouth. "P" shows a purplid lesion and papular surface located in the jugal mucosa representing a Hemangioma. "Q" shows a clinical representation of Actinic Cheilitis with heterogeneous aspect located in inferior labial submucosa exhibiting atrophy, peeling, edema, white plaque, ulcer, crust and loss of the dermatomucosal limit. "R" shows Leukoplakia on the lateral edge of the tongue, represented by a homogeneous white plaque, well circumscribed, of a corrugated surface, well delimited and asymptomatic

Discussion

This study compiled 12-year data from a Stomatology Service to trace the profile of the population attended and identify the most prevalent lesions among these individuals. Thus, the investigation encompassed 2,078 cases from January 2000 to December 2012, in which 59% of patients were women, 31% men and 11% did not inform the sex or the information was not available. These data demonstrate a ratio of 1.9:1 between women and men, a condition that is similar to those described by Melo *et al*,[5] Rosebush *et al*,[6] Deboni *et al*,[7] and Nascimento *et al*,[8], author that obtained a higher rate of female patients seeking stomatological care, a data that contradicts, however, the studies held by Neto *et al*,[9] who found a higher prevalence of male patients. This point difference in the results found by Neto *et al*.[9]

is possibly due to the sample selected for the research. Moreover, the fact that women attend more assiduously the health services than men is widely known.

The literature related to studies on histopathological examinations of Oral Pathology Laboratories in Brazilian universities is inconsistent in relation to the frequency of the anatomical localization most affected by the lesions. Different sites are cited, such as jaw[7], mandible[8], facial skin[10] and gingiva[11]. Besides, the present study found that jugal mucosa was the most frequently involved site (21%). Possibly, the different results occurred because certain services are a reference in the treatment of certain types of lesions, ultimately directing a greater number of specific cases, which present an almost exclusive anatomical localization. For example, the odontogenic keratocysts are most often located in the posterior mandibular region, which causes a great variability in the frequency of most-affected sites according to the locations in which the studies were performed.

Regarding their nature (benign or malignant), most lesions were benign, prevailing those resulting from reactional or traumatic processes, with the most frequent diagnosis being the inflammatory fibrous hyperplasia, which corroborates the findings of other researchers.[8,10,12]Furthermore, the higher prevalence of the lesions characterized as non-neoplastic proliferative processes may be directly related to the patients' mean age (50.63 years) because such alterations mostly occur due to constant and long-term traumas – such as the use of maladapted prostheses or habits such as biting the mucosa –, conditions that are more common in older patients.

It is noteworthy that squamous cell carcinoma, diagnosed in 7.91% of cases, is an aggressive disease with high rates of morbidity, mortality and associated recurrence. The professional must consider it as a relevant diagnostic hypothesis when treating ulcerated lesions in specific anatomical sites (lateral tongue edges, mouth floor), especially in patients with known risk factors (smoking and alcohol consumption). In these cases, the professional should conduct a biopsy to examine the tissue microscopically for an accurate diagnosis, and if the suspicion is confirmed, refer the patient to the appropriate oncological treatment.

In their studies, Xavier *et al*[13] and Furtado *et al*[14] reported that cultural differences, low schooling, low family income and cultural habits are risk factors for the development of oral diseases, meaning that the biological risk becomes greater when adding the behavioral risks, derived from socioeconomic and cultural conditions. In this context, health professionals should be attentive to their patients' profile, especially in countries such as Brazil, which has a highly heterogeneous population both biologically as socio-economically. Thus, to understand the determinants and conditioning factors influencing the individual's health are crucial for a more accurate diagnosis.

Conclusions

The epidemiologic profile of patients attended during the study period consisted predominantly of women over 50 years of age and the most prevalent oral lesion was inflammatory fibrous hyperplasia. The results found are compatible with the patients' profile and with the prevalence of oral and maxillofacial pathologies described by other authors. Besides, they enable the elaboration of specific strategies for prevention and early diagnosis of lesions that affect certain segments of the population, based on the profile of the patients attended by the service.

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