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A retrospective 21-year study of tumoral lip lesions

Renata da Rocha Arcoverde, Elaine Judite de Amorim Carvalho*, Augusto César Leal da Silva Leonel, Danyel Elias da Cruz Pérez, Emmanoel Matheus de Oliveira Matos and Jurema Freire Lisboa de Castro

Universidade Federal do Pernambuco, Av. Prof. Artur de Sá, 329-481, 50670-901, Recife, Pernambuco, Brazil. *Author for correspondence. E-mail: elaine.carvalho@ufpe.br

ABSTRACT. Lips are the location of more than 27.5% of oral lesions due to their anatomical location and constant exposure to irritating factors. The aim of the present work was to carry out a study of lip neoplasms diagnosed in an oral histopathology laboratory. This is a cross-sectional study based on secondary data of lip neoplasms diagnosed in a histopathology service between January 2000 and December 2021. 109 cases (7.6% of the total) were analyzed. The average evolution time was 26.55 months. Excisional biopsy was more frequent in 52 cases (47.7%). Males were affected in 63 cases (57.8%). The mean age was 47.07 years. Benign neoplasms were more frequent in 71 cases (65.1%), the lower lip was the main site of occurrence, with 61 cases (56%). Papilloma accounted for 33 cases (30.3%), oral squamous cell carcinoma for 32 cases (29.4%) and pleomorphic adenoma for 12 cases (11%). In 81 cases (74.3%), there was agreement between clinical diagnosis and histopathological findings. Benign neoplasms are more frequent than malignant ones, with higher incidence in males and in patients over the 5th decade of life. The most common location was the lower lip and oral squamous cell carcinoma accounted for most malignant neoplasms.

Keywords: lip; neoplasm; lip diseases; oral pathology.

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Introduction

Due to their anatomical location, mobility and contact with the teeth, lips are constantly exposed to various types of irritating and carcinogenic agents, such as ultraviolet radiation, food, tobacco and trauma (Patil & Maheshwari, 2014; Curra et al., 2016; Barros et al., 2020; Günizi & Günizi, 2022). Thus, lips can be considered a site where several types of pathological and clinical alterations of the most varied origins can occur: traumatic, infectious, inflammatory lesions, lesions with malignant potential and those of neoplastic nature (Ntomouchtsis et al., 2010; Kalogirou et al., 2021; Osterne et al., 2011; Alhabbab & Johar, 2022).

Lips can host up to 25.7% of oral lesions, including oral cancers (Barros et al., 2020). According to Alhabbab and Johar (2022), oral cavity neoplasms represent approximately 5% of all malignant neoplasms, being about 90% squamous cell carcinomas (SCC), whose clinical behavior is quite aggressive and presents early cervical metastasis (Louredo et al., 2022).

Regarding the predominant location of these lesions, the lower lip is considered by most authors to be the main site affected, followed by the upper lip and lip commissure (Ntomouchtsis et al., 2010; Curra et al., 2016; Kalogirou et al., 2021; Osterne et al., 2011; Barros et al., 2020).

Due to the wide range of neoplastic lesions capable of developing in the labial region and considering that some of these have aggressive behavior, adequate and early diagnosis is essential to establish adequate treatment and promote prevention. For this, detailed clinical and histopathological examinations are necessary, in which it is necessary to understand the etiology and risk factors, distribution, natural history and epidemiology of oral mucosa pathologies (Ntomouchtsis et al., 2010; Hashim, Genden, Posner, Hashibe, & Boffeta, 2019; Osterne et al., 2011).

In this context, the aim of the present work was to carry out a study of lip neoplasms diagnosed in an oral histopathology laboratory, in order to confirm the prevalence of SCC among malign neoplastic lesion in this location.

Materials and methods

This is a retrospective cross-sectional study based on clinical records and histopathological reports of lip biopsy samples diagnosed in an oral histopathology laboratory, approved by the Research Ethics Committee (protocol number: 46177521.0.0000.5208).

The study population consisted of all cases diagnosed and filed at the Oral Pathology Laboratory between January 1, 2000 and December 31, 2021.

Clinical and demographic data such as age, sex, lesion location (upper lip, lower lip or both), evolution time (in months), clinical diagnostic hypotheses, type of biopsy and final diagnosis were collected. To confirm the diagnosis, histological sections stained with hematoxylin-eosin filed in the biobank of the referred service were reviewed by two experienced pathologists. After review, lesions were grouped according to their nature into: (1) benign neoplasms and (2) malignant neoplasms, according to classification proposed by Slootweg and El-Nagar (2018).

Collected data were typed and analyzed using the IBM Statistical Package for the Social Science (SPSS) Statistics software (IBM Corporation, New York, United States), version 24.0. Descriptive statistics were obtained for all variables described. Associations between clinical and histopathological characteristics were assessed using the Fisher's exact test or chi-square test.

Results and discussion

Of 1433 lip lesions diagnosed in the Oral Histopathology Laboratory, 109 (7.6%) were neoplasms.

The mean age of patients was 47 years (minimum age of 05 years and maximum of 97 years), and the mean evolution time of cases was 26.55 months (minimum time of 0.23 months and maximum time of 480 months). Males were affected in 57.8% (n63) of cases, followed by females with 42.2% (n46).

The most frequent location of lesions was the lower lip (56%) and in 72.5% of cases, the type of biopsy performed was reported, of which 47.7% were of excisional type.

As can be seen in table 1, the most frequent lesion was papilloma (30.3%) followed by SCC (29.4%). Thus, benign neoplasms are more prevalent than malignant, accounting for 65.1% of cases.When analyzing whether diagnostic hypotheses were compatible with the histopathological diagnoses found, 74.3% agreement was obtained (Table 2).

Table 1. Distribution of cases by histological diagnosis.

Histopathological Diagnosis	Frequency	Percentage
Squamous Cell Carcinoma	36	29.4
Hemangioma	10	9.2
Fibrolipoma	2	1.8
Papilloma	33	30.3
Pleom. Adenoma	11	11
Canal. Adenoma	4	3.7
Leiomyosarcoma	1	0.9
Lipoma	8	5.5
Neurofibroma	2	2.8
Glomous cell tumor	1	0.9
Polymorphous low-grade adenocarcinoma	1	0.9
Bascellular CA.	3	2.8
Mucoepidermoid CA.	1	0.9
Total	109	100

Pleom. adenoma.: Pleomorphic adenoma; Canal. Adenoma: Canalicular adenoma.

Source: Oral Histopathology Laboratory.

Table 2. Distribution of concordances between clinical and histopathological diagnoses.

		Frequency	Percentage
Valid	Yes	81	74.3
	No	27	24.8
	Total	108	99.1
Omission		1	0.9
Total		109	100

Source: Oral Histopathology Laboratory.

Table 3 shows the distribution of neoplasms by decade of life. It was observed that the 5th decade of life was the most affected, with 14.7% of cases, followed by the 6th (12.8%) and the 2nd decade of life (11.9%).

Table 4 illustrates the correlation of histopathological diagnoses with variables sex, location, type of biopsy, confirmation of clinical diagnosis through histopathological analysis and lesion group.

Table 3. Distribution of neoplasms by decade of life.

	Decade	Frequency	Percentage
valid	1st decade	7	6.4
	2nd decade	13	11.9
	3rd decade	7	6.4
	4th decade	8	7.3
	5th decade	16	14.7
	6th decade	14	12.8
	7th decade	12	11.0
	8th decade	12	11.0
	9th decade	6	5.5
	10th ecade	1	0.9
	Total	96	88.1
Omission		13	11.9
Total		109	100

Source: Oral Histopathology Laboratory.

Table 4. Correlation of histological diagnoses with sex, lesion location, type of biopsy, confirmation of clinical diagnosis and lesion group.

Histological diagnosis	Variables											
	Sex (%)		Lesion location (%)				Biopsy (%)		Confirm. (%)		Group (%)	
	F	M	LL	UL	UnL	ULL	Exc	Inc	Yes	No	Malig	Benig
SCC	31.3	68.8	93.8	6.3	0	0	13	87	81.3	18.8	100	0
Hemangioma	60	40	30	60	10	0	71.4	28.6	50	50	0	100
Fibrolipoma	0	100	100	0	0	0	100	0	100	0	0	100
Papilloma	51.5	48.5	48.5	33.3	15.2	3	89.7	10.3	93.9	6.1	0	100
Pleom. adenoma	41.7	58.3	0	100	0	0	87.5	12.5	63.6	36.4	0	100
Canalicular adenoma	0	100	0	100	0	0	-	-	66.7	33.3	0	100
Leiomyossarcoma	0	100	100	0	0	0	-	-	0	100	100	0
Lipoma	50	50	83.3	16.7	0	0	100	0	66.7	33.3	0	100
Neurofibroma	66.7	33.3	66.7	33.3	0	0	100	0	33.3	66.7	0	100
Glomus cell tumor	100	0	100	0	0	0	-	-	0	100	0	100
Polymorphous low-grade adenocarcinoma	100	0	0	100	0	0	100	0	0	100	100	0
Basocellular ca.	0	100	33.3	66.7	0	0	50	50	66.7	33.3	100	0
Mucoepidermoid ca.	0	100	100	0	0	0	-	-	0	100	100	0

LL: lower lip; UL: Upper lip; UnL: unspecified lip; ULL: upper and lower lip; Exc: excisional; Inc: incisional Malig: malignant; Benig: benign; Confirm: confirmation. † % of cross-tabulation between % of histopathological diagnosis and each of the variables.

Source: Oral Histopathology Laboratory.

In Table 5, it is possible to observe the correlation of histopathological diagnoses with decades of life.

The present study analyzed lip neoplasms diagnosed in an oral histopathology laboratory regarding histological patterns, correlating them with variables such as: lesion site, lesion group, evolution time, sex, decade of life, type of biopsy and agreement between clinical and histopathological diagnoses.

The site most affected by neoplasms was the lower lip. This result is consistent with those found in the study by Barros et al. (2020), who conducted an 11-year retrospective study of lip lesions treated at an oral diagnostic service, in which 76,2% affected the lower lip and it was concluded that this result is due to traumas that occur in this region.

Male patients were the most affected by neoplasms and the most frequent age groups were the 5th, 6th and 2nd decades of life, respectively. These results are consistent with other studies reviewed in literature (Ntomouchtsis et al., 2010; Osterne et al., 2011; Barros et al., 2020; Kalogirou et al., 2021).

Regarding the evolution time/complaint of lesions at the time of biopsy, it was observed that the average was 26.55 months, an alarming data that may reflect the difficulty of access and delay of the population in seeking health care services.

Table 5. Correlation of histological diagnoses by decade of life.

Histological Diagnosis		Decade of Life (%)										
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total (%)
SCC	% HD	0	0	0	6.7	16.7	20	16.7	26,7	13.3	0	100
Hemangioma	% HD	0	10	0	30	10	30	10	10	0	0	100
Fibrolipoma	% HD	0	0	0	0	0	0	50	0	0	50	100
Papilloma	% HD	21.4	28.6	3.6	7.1	28.6	0	7.1	3.6	0	0	100
Pleom. adenoma	% HD	0	30	30	10	10	0	20	0	0	0	100
Canalicular adenoma	% HD	0	100	0	0	0	0	0	0	0	0	100
Leiomyossarcoma	% HD	100	0	0	0	0	0	0	0	0	0	100
Lipoma	% HD	0	0	0	0	20	40	0	40	0	0	100
Neurofibroma	% HD	0	0	33.3	0	0	0	33.3	0	33.3	0	100
Glomus cell tumor	% HD	0	0	0	0	0	100	0	0	0	0	100
Adenocarcinoma Polymorphous low-grade adenocarcinoma	% HD	0	0	100	0	0	0	0	0	0	0	100
Basocellular ca.	% HD	0	0	50	0	0	50	0	0	0	0	100
Mucoepidermoid ca.	% HD	0	0	0	0	0	100	0	0	0	0	100

HD: histopathological diagnosis.

Source: Oral Histopathology LaboratoryRe.

Regarding the type of biopsy, a significant part of referral forms did not have this information, which is another finding that may indicate the carelessness of professionals in filling out the clinical form to request histological examination. In the present study, excisional biopsy was predominant, a result consistent with that found in the study by Kalogirou et al. (2021), in which lip lesions were excised in 98.5% of cases. This agreement may be because, in both studies, the percentage of benign lesions was higher, which would justify the excisional biopsy.

Benign neoplasms were more prevalent than malignant neoplasms, which corroborates the consulted literature (Osterne et al., 2011; Curra et al., 2016). Most benign salivary gland neoplasms are more frequent in the upper lip (Osterne et al., 2011; Kalogirou et al., 2021). In this study, among all diagnosed neoplasms, SCC was the most incident, which led to the conclusion that the lower lip is the most affected site.

Still in relation to SCC, 2 cases occurred in the upper lip, an unusual location for its development, since the main etiological factor is exposure to solar radiation. Another very relevant data in the present study regarding SCC is that this lesion occurred before the age of 40 years in 3% of cases, drawing attention to the increasing occurrence of oral cancer in younger patients. Despite this finding, cases of SCC diagnosed in this study were more prevalent in the 6th and 8th decades of life, which is in agreement with results found in other studies, which reported that the most prevalent age groups are the 7th, 8th and 9th decades of life (Osterne et al., 2011; Kalogirou et al., 2021).

Among benign neoplasms, the most prevalent were, respectively, papilloma, pleomorphic adenoma and hemangioma. This result is similar, in part, to that found in other studies, as some results report fibroma and lipomas as among the most prevalent neoplasms (Ntomouchtsis et al., 2010; Curra et al., 2016; Kalogirou et al., 2021).

In the present study, agreement between clinical and histopathological diagnoses was observed in most cases, a result that reflects the good preparation of professionals in diagnosing mouth lesions, a result similar to that found in the study by Curra et al. (2016), who analyzed the accuracy of clinical diagnosis for the identification of potentially malignant tumors and disorders and malignant lip lesions. However, despite the high accuracy rate, and in line with results found in literature, a significant part of lesions diagnosed as SCC were not compatible with the diagnostic hypothesis recorded in the referral form. This also draws attention to another fact, the high rate of excisional biopsies in cases diagnosed as SCC, biopsies were excisional and in the only case of polymorphous low-grade adenocarcinoma, excisional biopsy was also performed, raising the discussion regarding the possible total removal of malignant tumors by dentists and its impact on the patient's prognosis.

Conclusion

In the series of cases under study, it was possible to affirm that benign neoplasms are more frequent than malignant ones, with higher incidence in males and in patients from the 5th decade of life. The most affected location was the lower lip and squamous cell carcinoma was the lesion that accounted for the largest number

of cases among malignant neoplasms. There was a high accuracy rate between clinical and histopathological diagnosis. It is important to emphasize that whenever there is suspicion of malignancy, incisional biopsy rather than excisional biopsy must be performed.

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