

## Research Article

# Lipoma of the Oral Cavity: A Retrospective Study Twenty Years

Coniglione F<sup>1,2</sup>, Luciani F<sup>1</sup>, Leggeri A<sup>3\*</sup> and Polici P<sup>4</sup>

<sup>1</sup>Department of Surgical Science, Catholic University "Our Lady of Good Counsel", Albania

<sup>2</sup>Department Medical Science and Translation Medicine, University of Rome "Tor Vergata", Italy

<sup>3</sup>Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Italy

<sup>4</sup>Department of Medical Science, Catholic University "Our Lady of Good Counsel", Albania

## Abstract

**Purpose:** The purpose of this study was to determine the clinical and histological features and treatment of lipomas.

**Materials and methods:** All cases were retrieved from the archives of the Department of Oral-Maxillo Facial Surgery of the University of Rome "Tor Vergata". Data on age, sex, location, clinical appearance, duration, recurrence, and histological appearance were evaluated. Have analysed a total of 3048 patients, patients were examined for 52% of male sex (1585 units) and 48% female (1463 units), the mean age (SD) is 55 years, highest in women 57 than in men 53 (p=0.001).

**Results:** The aim of our research was to analyse from a retrospective, the incidence of lipoma of the oral cavity in 20 aa of clinical activity in our department for surgical practice of the "Policlinico Tor Vergata". In the period between 2003 and 2022, we recorded 29 diagnoses of lipoma of the floor of the mouth, 18 women, and 11 men.

**Conclusion:** In view of the fact that there is a lack of consensus on the most appropriate treatment modality for lipomas. There is a need to conduct more evidence-based clinical studies for clinical practice guidelines in the management of lipomas. The benign nature of intraoral lipomas is supported by its bland histopathologic appearance and the absence of recurrences following complete local excision. In conclusion, from data in our possession, the incidence of lipomas of the oral cavity, in the sample we examined (3048 subjects), was 0.951%.

**Keywords:** Lipoma; Mesenchymal tumors; Oral cavity

## Introduction

The lipomas are common mesenchymal neoplasms of soft tissues and affect more frequently the proximal portions of the extremities [1]. Lipomas are the most common benign tumours affecting the human body. Generally, lipomas are asymptomatic; they are typically removed for cosmetic purposes or when they impair surrounding tissues causing mechanical dysfunction. They are painless, composed of fat, and typically develop slowly in the proximal extremities or the trunk. They are rarely seen in the maxillofacial or oral regions, though they commonly appear all over the human body [2].

The incidence in the regions of the head and neck corresponds to about 15% to 20% of all lipomas [3]. Their overall incidence in the oral cavity is thought to be less than 4.4 % of all benign oral mesenchymal neoplasms. Oral lipomas may occur in various anatomical sites including the major salivary glands, buccal mucosa, lip, tongue, palate, and floor of the mouth. Of these, the buccal mucosa and buccal vestibule are the most common intraoral sites and account for

approximately 50% of all cases [4].

Lipoma growth is generally slow, thereby leading to delay in follow-up by the patient thus delaying diagnosis and treatment. Magnetic Resonance Imaging (MRI) allows for accurate diagnosis. The first line of treatment is resection [5]. Even though lipomas are benign, slow growing, and generally do not invade surrounding tissues, they can cause issues in the maxillofacial region and oral cavity due to the close complex anatomy of those areas. They typically cause a "mass effect" or entrapment of surrounding musculature, glands, nerves, and dental anatomy [3].

This effect on surrounding anatomy can become bothersome, interfering with chewing, speech, and tongue movement [2]. Lipoma growth is generally slow, leading to the patient's delayed follow-up, thus delaying diagnosis and treatment. Magnetic Resonance Imaging (MRI) allows for accurate diagnosis [3,4]. Other non-invasive imaging techniques, like ultrasound sonography, have also been used in the oral cavity to help and guide the clinician in the differential diagnosis [6]. The first line of treatment is resection [3,4,6].

Lipomas can be classified in histopathological subtypes and their frequency in the oral cavity varies (depending on the review analysed). Fregnani et al. who analysed 46 cases of intraoral lipomas, showed that the most common histological subtype is the ordinary lipoma and the second fibrolipoma [6]. Furlong et al. [7] reported that spindle cell lipomas are also common. The subtypes are: the simple lipoma, the fibrolipoma, the spindle cell lipoma, the infiltrating lipoma, the mixolipoma, the lipoma and atypical pleomorphic lipoma. Classification is drawn according to the different location of

**Citation:** Coniglione F, Luciani F, Leggeri A, Polici P. Lipoma of the Oral Cavity: A Retrospective Study Twenty Years. Surg Clin J. 2023; 4(1): 1048.

**Copyright:** © 2023 Filadelfo Coniglione

**Publisher Name:** Medtext Publications LLC

**Manuscript compiled:** Aug 18<sup>th</sup>, 2023

**\*Corresponding author:** Andrea Leggeri, Viale Trieste 16, 00019 Tivoli, Rome, Italy, Tel: +39-3388445970

the neoplasm or cell types [8].

The aim of this study is to analyse retrospectively the incidence of lipoma of the oral cavity in 20 years of clinical activity. We describe a statistical analysis of 29 patients and a case of lipoma of the floor of the mouth treated through pathological biopsy with cold blade.

### Case Presentation

L.R. a 48-year-old woman presented with a 3 cm mass covered by normal appearing surface in the floor of the mouth (Figure 1 A,B). Her medical history was not contributory. On general examination, no abnormalities were detectable, with a painless palpable mass in his tongue, which had been present for 3 years.

During physical examination the mass was found to be located in the right side of the floor tongue and measured 3 cm × 2 cm × 2 cm (Figure 1A and B).

The tumor, which was palpated as a cystic mass, was covered by normal mucosa and was rubbery in consistency. No cervical lymphadenopathy was noted. An excisional biopsy was performed under local anesthesia (Figure 2).



Figure 1: A, B) Preoperative intraoral view of the lipoma.

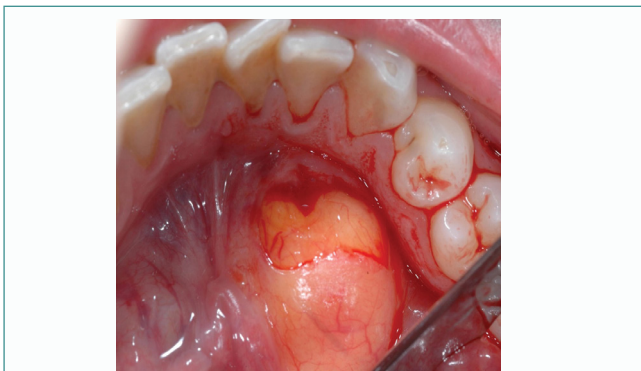


Figure 2: Intraoperative view of the lipoma.

The encapsulated tumor was dissected and excised through a upper-medial incision over the lesion. Grossly the lipoma was smooth, well-circumscribed, and round-to-oval encapsulated (Figure 3 A-C). The cut surface of a lipoma varied from yellow to orange and had a uniform greasy surface and an irregular lobular pattern (Figures 4-7).

### Material and Methods

#### Study sample

Between 2003 and 2022, among 3048 cases of oral lesions diagnosed in the Department of Oral-Maxillo Facial Surgery, University of Tor Vergata Roma (0.0095%) 29 were oral lipomas. All these cases were retrieved for this study. Clinical data, such as age and gender of the patient, site, duration of the complaint, treatment, and

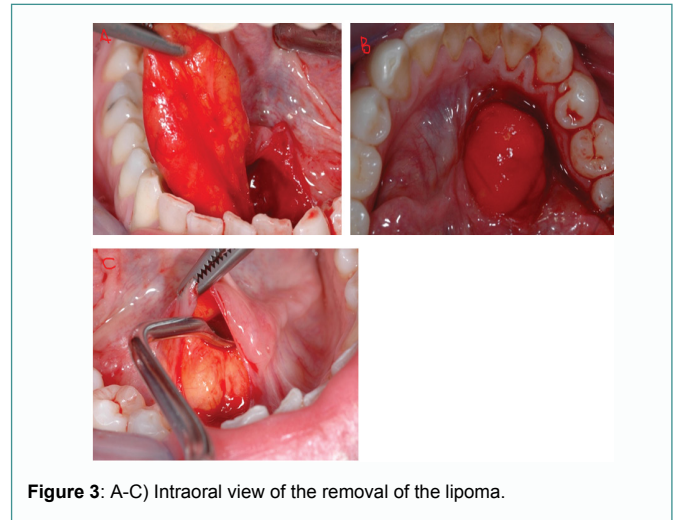


Figure 3: A-C) Intraoral view of the removal of the lipoma.

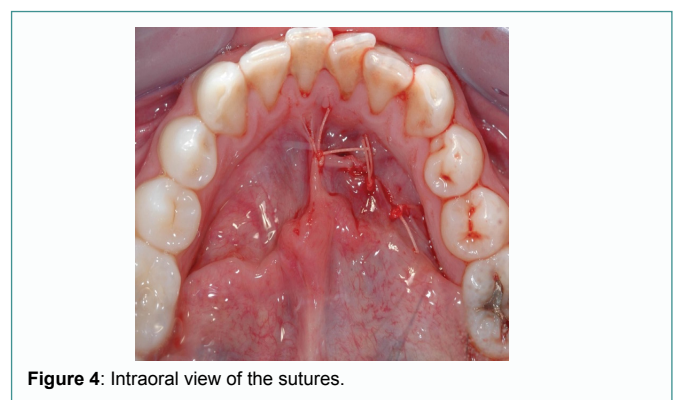


Figure 4: Intraoral view of the sutures.

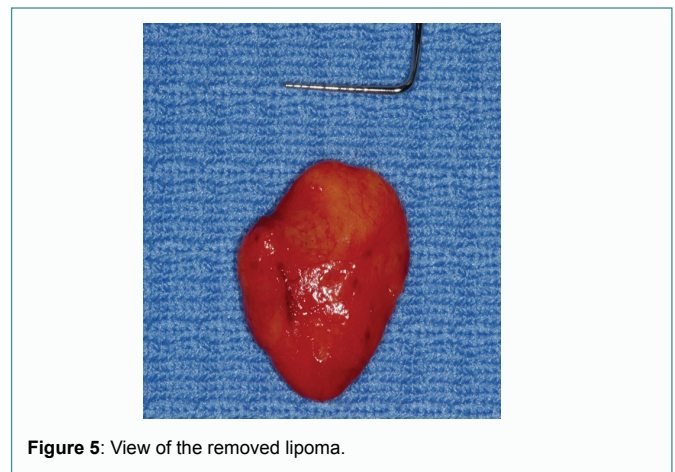


Figure 5: View of the removed lipoma.

follow-up, were obtained from the patient's records and are shown in Table 1.

#### Data analysis and statistics

Univariate analysis was performed to evaluate the prevalence of pathologies. The Chi-squared test was used for comparisons between groups and the t-test between means. A P value of <0.05 (two tailed) was considered statistically significant. All the analyses were performed with SPSS for Windows (release 9.0; SPSS Inc., Chicago, IL).

### Results

A total of 3048 patients' records were examined. 52% of male sex

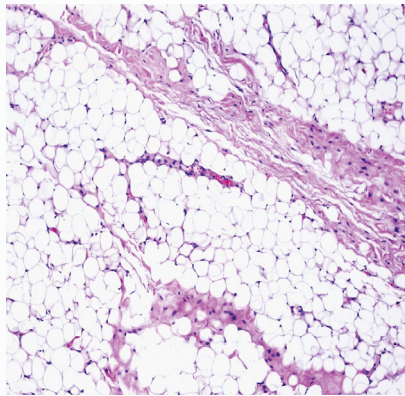


Figure 6: Histological image of the lipoma.

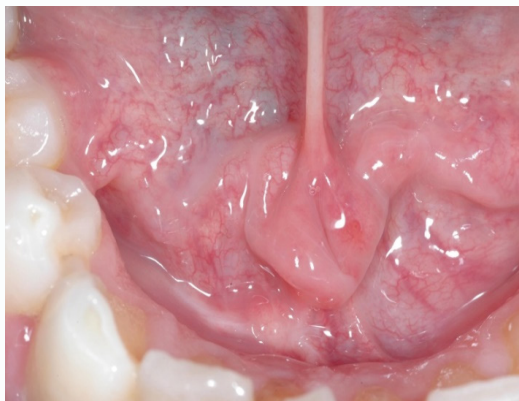


Figure 7: Healing.

(1585 units) and 48% female (1463 units), the mean age (SD) is 55 years, highest in women 57 than in men 53 ( $p=0.001$ ). In the period between 2002 and 2021, we recorded 29 diagnoses of lipoma of the floor of the mouth (Table 1), 18 women (mean age 57.44 SD 10.45 years) and 11 men (mean age 53.8 SD years 2.59). The average age of the examinees is 54.79, with an SD year of 8.64. The main locations of occurrence that we recorded were the tongue (14 cases, 10 women and 4 men) and oral mucosa (8 patients, 6 men and 2 women). Clinically, all cases presented as painless, well-circumscribed, submucosal nodules with fibro-elastic consistency, yellowish color, and a covering of smooth mucosa. Microscopically, there is a thin fibrous capsule from which delicate fibrous septa extend into the substance of the tumor, separating it into lobules composed of mature adipose cells. The presence of a fibrous capsule serves to distinguish a lipoma from a simple aggregation of fat. Electron microscopic studies have shown that the cells of the lipoma are morphologically similar to the cells of normal mature adipose tissue.

In conclusion, from data in our possession, the incidence of lipomas of the oral cavity in the sample we examined (3048 subjects) was 0.951% (Table 1).

## Discussion

The most frequent location of the oral lipomas is the buccal mucosa. The sex distribution is equal. Lipomas arise submucosally, presenting a soft, smooth mass, frequently with a yellowish tinge [9-11]. The buccal and tongue mucosa are the most frequent sites for simple lipoma, followed by the floor of the mouth, buccal vestibule, palate, lips, and gingiva [6,12-14]. The cause of simple lipoma and

fibrolipoma remains unclear. Various pathogenetic mechanisms, such as origin from lipoblastic embryonic cell nests, metaplasia of muscle cells, and fatty degeneration, have been proposed as putative causative factors for simple lipoma [13-15]. Other factors such as trauma, infection, chronic irritation, and hormonal imbalance also have been implicated [14,15].

From a histopathological perspective, simple lipomas are characterized by the presence of mature fat cells arranged in lobules separated by septae and containing small numbers of blood vessels. A useful diagnostic marker in the differential diagnosis between benign and malignant adipose tissue tumors is the immunohistochemical detection of a P2 protein, which is expressed in lipoblasts [12,16]. Most connective tissue cells are suitable for storage of adipose tissue [15,17]. These cells, called adipocytes, derive from embryology primitive mesenchyme [16,18], and are the main family present in adipose tissue, although they may be found in small groups in any cellular tissue [11,13]. Formations resulting from neoplastic adipocytes are commonly known as lipomas [9,10].

Lipomas are relatively common soft tissue mesenchymal neoplasm affecting more frequently trunk and proximal portion of the extremities [8]. Lipomas were first described by Grosch MEP in 1887 [15]. Occurrence in the head and neck region corresponds to about 15% to 20% of all lipomas [17]. Males aged between 50 and 70 years are the most affected, with a prevalence of about 4:1 compared to females. The area with the highest incidence is the nuchal region, departing from the white adipose subcutaneous panniculus [8-10]. Lipomas located in the oral cavity are relatively rare, but the locations with the highest incidence are the buccal mucosa, where the quantity of adipose tissue is abundant, lips and tongue [7]. Very rare is the location in the hard palate, where the presence of fat is minimal [6]. Rare is also the location within the floor of the mouth, where in the clinical and radiological aspect, can simulate a mucocele [11,13]. According to the anatomic-pathological classification we can distinguish various types of lipomas [6]. These variants are characterized by the increased presence of certain tissue structures compared with other less represented. We can distinguish the following lipomas: Fibrolipomas, characterized by the presence of fibrous collagen that form a network around the adipocytes; infiltrating lipomas, special form of lipoma which despite being a benign tumour presents local invasiveness and tendency to relapse.

Clinically, oral infiltrating lipoma presents as a well circumscribed painless solitary submucosal swelling. On palpation, the tumor is semifirm and rubbery, with poorly defined margins. It is usually situated in the deeper tissues, the infiltrating lipoma is not encapsulated, and complete excision is difficult because of the diffuse muscular infiltration; angioliipomas, where the composition of the lipoma is vascular mixed with a stroma of mature adipocytes; myxoid lipoma, the variant that has the highest rate of recurrence, therefore requiring careful surgical procedures; atypical lipomas, consisting of elements not reflected in the common neoplastic benign forms, such as immune-histochemistry positivity in search receptor p-53 and the presence of giant and plain cells or detection of atypical mitosis; pleomorphic lipomas, characterized by the presence of neoplastic adipose tissue, together with connective tissue, based on reactive mechanisms; spindle cell lipomas, which originally, was described a separate lesion from pleomorphic lipoma, but they are now considered to be a spectrum of the same entity; sialoliipoma, originating from intra-glandular adipose tissue, are the rarest form

**Table 1:** Clinical data of the patients involved in the study.

N° Subject	Male	Age Average and S.D.	Female	Age Average and S.D.	Age Average Tot	S.D. Tot	% su 3048 subj.
29	11	53.8 aa S.D.= 2.59	18	57.44 aa S.D.= 10.45	54.79	S.D.= 8.64	0.951

of lipomas, main feature is the presence of epithelial cells, ductal-like to form a small gland [5,6,12,19-21]. Sialolipoma are usually provided with a capsule, well encapsulated, who rarely infiltrates the near tissues. In differential diagnosis one must consider: the rare congenital or acquired lipomatoid mass; the soft fibroma; the soft irritation fibroma; the enlargement of Bichat's fat-ball in children; Recklinghausen's disease. Therefore, in agreement with literature [7,8,22], lipomas of the floor of the mouth are rare and proper diagnostic allows the complete resolution where surgical intervention is indicated. In conclusion, from data we have, the oral cavity's lipoma, have been found in 0.951% of the patients we have examine (3048 Patients). The diagnosis is based on both the clinical and histologic characteristics and it is fundamental in order to determine the most appropriate diagnostic and management steps for these tumors when affecting this specific anatomical location [23].

## Conclusion

Surgical removal of the superficially situated lipoma is not difficult in the majority of cases. Often it is an ovoidal tumor, encapsulated all around, which can be separated easily from the surrounding tissues. In case of a pedunculated lipoma, it is advisable to remove the tissue at the base of the tumor to a sufficient depth. In elongated flat tumors the marginal demarcation may at times be somewhat difficult, especially if much natural adipose tissue is present. In the case of more deeply situated lipomas not only the diagnosis but the therapy too may give rise to difficulties. Recurrence is unusual. Caution is required during their surgical excision to avoid recurrence. Preoperatively, a diagnosis of lipoma can be established by using computed tomographic imaging. The diagnosis is mainly based on the low mass density of lipomas. Using this method, infiltrating and well encapsulated tumors can be distinguished. Lipomas are common benign mesenchymal tumors. Lipomas are most often asymptomatic; typical features include soft fluctuant feel, lobulation, and the free mobility of overlying skin.

## Lipomas are removed for the following reasons:

- Cosmetic reasons;
- To evaluate their histology, particularly when liposarcomas must be ruled out;
- When they cause symptoms;
- When they grow and become larger than 5 cm

## Authors Contributions

Writing and revision of manuscript: F.C., F.L., L.A., P.P.; data collection and statistical analysis, F.L.; patient inclusion, F.C., F.L., A.L. P.P. All authors have read and agreed to the published version of the manuscript

## Informed Consent Statement

The patient's object of our research has signed the informed consent to the treatment and disclosure of data for scientific purposes with a guarantee of confidentiality.

## Data Availability Statement

The data were generated as part of the routine work of the departments.

## Conflicts of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## References

1. Daniel CS, Beaconsfield M, Rose GE, Luthert PJ, Heathcote JG, Clark BJ. Pleomorphic lipoma of the orbit: a case series and review of literature. *Ophthalmology*. 2003;110(1):101-5.
2. Gibson K, Swaid MB, Metz C. Large Lipoma of the Mouth Floor. *Cureus*. 2021;13(10):e18420.
3. Zhong LP, Zhao SF, Chen GF, Ping FY. Ultrasonographic appearance of lipoma in the oral and maxillofacial region. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2004;98(6):738-40.
4. Di Stasio D, Lauritano D, Paparella R, Franco R, Montella M, Serpico R, et al. Ultrasound imaging of oral fibroma: a case report. *J Biol Regul Homeost Agents*. 2017;31(2 Suppl 1):23-6.
5. Sakamoto Y, Oyama G. Giant Lipoma Presents from the Buccal Vestibule. *Case Rep Dent*. 2020;2020:8824548.
6. Di Stasio D, Montella M, Romano A, Colella G, Serpico R, et al. High-Definition Ultrasound Characterization of Squamous Carcinoma of the Tongue: A Descriptive Observational Study. *Cancers (Basel)*. 2022;14(3):564.
7. Furlong MA, Fanburg-Smith JC, Childers EL. Lipoma of the oral and maxillofacial region: Site and subclassification of 125 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2004;98(4):441-50.
8. Bengezi OA, Kearns R, Shuhaibar H, Archibald SD. Myxoid liposarcoma of the tongue. *J Otolaryngol*. 2002;31(5):327-8.
9. Lucas RB. Tumors of adipose tissue. *Pathology of Tumors of the Oral Tissues* (ed 4). London, England, Churchill-Livingstone. 1984. p. 176-177.
10. Greer RO, Richardson JF. The nature of lipomas and their significance in the oral cavity. A review and report of cases. *Oral Surg Oral Med Oral Pathol*. 1973;36(4):551-7.
11. Barker GR, Sloan P. Intraosseous lipomas: clinical features of a mandibular case with possible aetiology. *Br J Oral Maxillofac Surg*. 1986;24(6):459-63.
12. Bennett JH, Shousha S, Puddle B, Athanasou NA. Immunohistochemical identification of tumours of adipocytic differentiation using an antibody to aP2 protein. *J Clin Pathol*. 1995;48(10):950-4.
13. Nascimento AF, McMenamin ME, Fletcher CD. Liposarcomas/atypical lipomatous tumors of the oral cavity: a clinicopathologic study of 23 cases. *Ann Diagn Pathol*. 2002;6(2):83-93.
14. Epivatianos A, Markopoulos AK, Papanayotou P. Benign tumors of adipose tissue of the oral cavity: a clinicopathologic study of 13 cases. *J Oral Maxillofac Surg*. 2000;58(10):1113-7; discussion 1118.
15. Ottria L, Luciani F, Piva P, Alagna AM, Arcuri C, Bartuli FN. The flap recovery on the impacted lower third molar surgery comparing 3 different flap designs: a clinical study. *Oral Implantol (Rome)*. 2017;10(3):270-5.
16. Allen PW, Strungs I, MacCormac LB. Atypical subcutaneous fatty tumors: a review of 37 referred cases. *Pathology*. 1998;30(2):123-35.
17. Hattori H. Atypical lipomatous tumor of the lip with pleomorphic lipoma-like myxoid area, clinically simulating mucocele. *J Oral Pathol Med*. 2002;31(9):561-4.
18. Fanburg-Smith JC, Furlong MA, Childers ELB. Liposarcoma of the oral and salivary gland region: a clinicopathologic study of 18 cases with emphasis on specific sites, morphologic subtypes, and clinical outcome. *Mod Pathol*. 2002;15(10):1020-31.

19. Shon W, Billings SD. Soft Tissue Special Issue: Selected Topics in the Pathology of Adipocytic Tumors. *Head Neck Pathol.* 2020;14(1):1-11.
20. Zahrani AA, Qannam A, Al Sadhan R, Bello IO. Sialolipoma of the Floor of the Mouth with Immunohistological Analysis. *Case Rep Dent.* 2021;2021:6623045.
21. Salih AM, Abdullah AM, Fatah ML, Abdulla BA, Mohammed SH, Kakamad FH. Fibrolipoma of the tongue; a case report with literature review. *Ann Med Surg (Lond).* 2021;72:102985.
22. Cecchetti F, Luciani F, Bramanti E, Bartuli FN, Ottria L, Arcuri C. Cemento-ossifying fibroma juvenile of the oral cavity. *Oral Implantol (Rome).* 2010;3(1):33-7.
23. Pires FR, Souza L, Arruda R, Cantisano MH, Picciani BL, Dos Santos TC. Intraoral soft tissue lipomas: clinicopathological features from 91 cases diagnosed in a single Oral Pathology service. *Med Oral Patol Oral Cir Bucal.* 2021;26(1):e90-6.