Correlation between clinical and histopathologic findings 0f oral lesions

Faezeh Azmoodeh[1], Mahsa Esfahani[2], Amirhossein Sharifara[3]

[1]Assisnant professor of Oral and Maxillofacial pathology, Qazvin university of Medical Sciences, Qazvin, Iran
[2]Assistant professor of Oral and Maxillofacial medicine, Qazvin university of Medical Sciences, Qazvin, Iran
[3]Dentist, Qazvin, Iran

Original Research Article

Abstract: Achieving the right differential diagnosis is the most important and most difficult step for proper treatment and the realization of the best long-term prognosis. Several types of oral lesions with similar appearance demands that the final diagnosis be made on both clinical and histopathologic grounds. The objective of the study was to evaluate the agreement between clinical and histopathological diagnosis in Qazvin dental school. In this cross-sectional (descriptive - analytical) and retrospective study, 488 cases in the Archives of Pathology Laboratory of Qazvin Dental School over the years 2007-2012 were studied. Clinical data including age, sex, and lesion location; clinical diagnosis, histopathological characteristics and physician specialty were recorded. From 488 reviewed cases, 141 cases due to lack of diagnosis and 23 cases due to inadequate biopsy were excluded. Soft tissue lesions with 33.6% had the most frequency followed by dermatologic diseases. 69.1% of clinical diagnosis was consistent with histopathologic diagnosis. There was a significant correlation in consistent of clinical diagnosis and histopathologic diagnosis with lesion type and physicians specialty (P<0.05). Our findings showed that in 69.1% of oral lesions, clinical diagnosis was confirmed by histopathologic examination. The discrepancy between clinical and histopathologic diagnoses in 30.9% of cases suggests that all oral lesions(specially odontogenic lesions) should be submitted to histological analysis.

Keywords: Compliance, clinical, histopathological, diagnosis, Qazvin

INTRODUCTION

The oral cavity may be the site of different lesions [1].Unfortunately, the large variability of the clinical appearance of oral lesions complicates the precise diagnosis unless a histological examination is done. Consequently, diagnosis of oral lesions cannot be only derived from the clinical findings[2,3].Only a successful teamwork between an oral surgeon and a pathologist can guarantee a reliable diagnosis[4].

Conformity of clinical and pathological diagnosis of oral lesions varied in different studies [1]. In addition majority of investigations concentrated on specific conditions such as odontogenic cysts and tumours , salivary gland tumours, oral premalignant lesions[3,5,6]. Some previous studies showed a 69%-70% agreement between clinical and histopathological studies, while other studies demonstrated a weak agreement in cases of dysplasic lesions. Other studies reported lack of clinico-pathological correlation in the diagnosis of oral lichen planus [1]. According to the literature review that we do, there was not any study that evaluate such Correlation between clinical and histopathologic findings 0f oral lesions in Iran/ Qazvin, and also we do not know which specialist in field of

dentistry have more wisdom about clinical diagnosis of oral and maxillofacial lesions so the aim of this retrospective study was to determine the correlation between clinical and histological diagnosis of different oral lesions in 232 cases of an Iranian population .

MATERIALS AND METHODS

The archived files of 324 patients with oral lesions who were referred between the years 2002 to 2007 to the Department of Oral Pathology was evaluated, as we recorded all the files so our study was census. According to ethics committee rules all data were kept confidential. The biopsies were received by the periodontist, oral & maxillofacial surgeon, oral medicine, general dental practitioner and other specialists. The files of the 36 cases (13.4%) were excluded because of clinical diagnosis lack. We analyzed the following variables: sex, age, lesion site, surgeon's specialty, clinical and histopathological diagnoses. For regularizing in performing this study we used a custom questionnaire that all data was written in it.

The cases were subdivided into bone pathologies, epithelial pathologies, soft tissue lesions,

odontogenic cyst and tumors, dermatologic diseases and salivary gland lesions according to Neville classification [7].

The histopathologic diagnosis was compared with clinical diagnosis and a concordance index (CI): (the number of cases in which the microscopic diagnosis coincided with one of the two clinical differential diagnoses /the number of total sample) x 100 was calculated. The rate of correct clinical diagnosis (concordance index) was evaluated regarding the type of lesions and also surgeon's specialty. All the data were analyzed using Chi-Square test and version 15.0 of SPSS for Windows. Statistical significance was set at a p value of <.05.

RESULTS AND DISSCUTION

Among the 324 patients screened 43.9% were males and 56% females, with ages ranged between 10 and 70 years. The types of the lesion according to histopathologic diagnosis and their prevalence are shown in chart 1.The more prevalent pathologies were soft tissue lesions, followed by dermatologic diseases.

As can be seen in chart 2, most of the biopsies were referred by oral & maxillofacial surgeon. The overall concordance index between clinical and histopathologic diagnoses was 69.1 %(77% for the first clinical diagnosis and 33% for the second one). (Chart 3)

There was significant differences in CI in different types of the lesions (p=0.03).The maximum CI was found in salivary gland lesions (89.5%) fallowed by dermatologic diseases (80%). (Table 1). Among different specialists, oral medicine had the highest CI (78.6%). Table 2
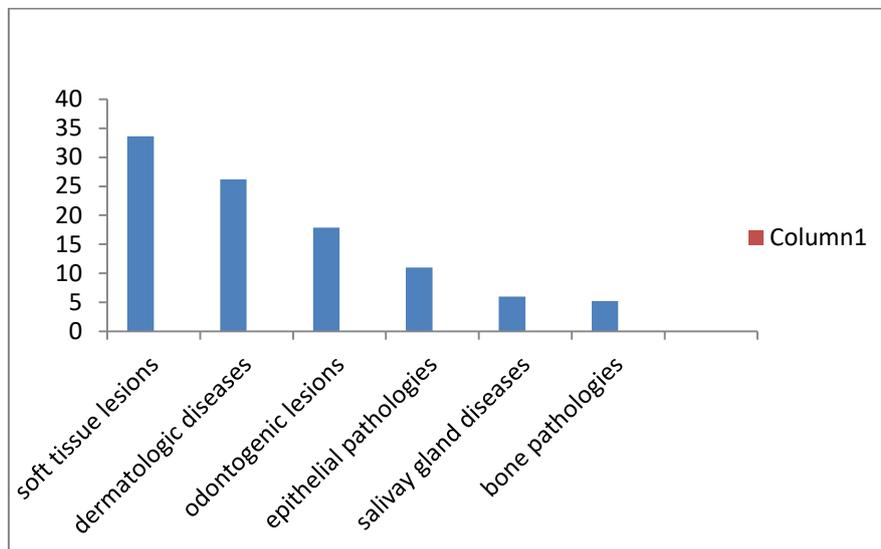
Chart-1: **prevalence of the lesion according to histopathologic diagnosis**
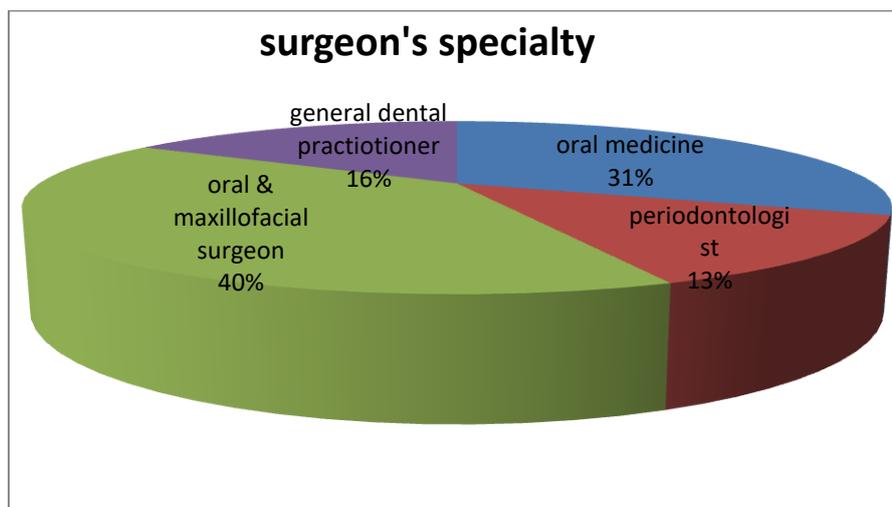
Chart-2: **prevalence of the biopsies based on the surgeon's speciality.**
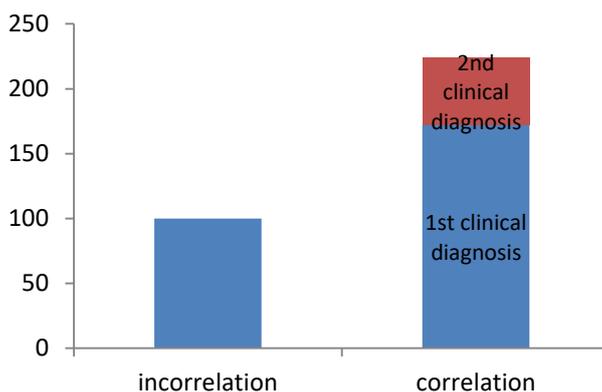
Chart-3: **The overall concordance index between clinical and histopathologic diagnoses**

Table-1: **Concordance index between clinical and histopathologic diagnoses**

lesion	Soft tissue lesions	Bone pathologies	Dermatologic lesions	Odontogenic lesions	Salivary gland lesions	Epithelial pathologies
CI	64.2%	64.7%	80%	60.3%	89.5%	63.9%
P=0.03						

Table-2: **concordance index based on the surgeon's specialty**

Surgeon	Periodontist	Oral & maxillofacial surgeon	Oral medicine	General dental practitioner
CI	56.1%	68.5%	78.6%	58.8%
P=0.023				

According to our present study, lesions form soft tissue were the most common lesions that were biopsied by dentists; mucocutaneous, odontogenic, epithelially, salivary glands and intra-bony lesions respectively. In this study the overall evaluation, clinical and histopathological diagnostic agreement was 69.1%. Similary, in the department of oral and maxillofacial pathology in Esfahan, Deihimi *et al*. reported that correlation between clinical and histopathological diagnosis of different oral and dental diseases were 67.4 % [8]. Saravani et al's results were more similar to our's with 70% agreement rate [9]. In Hashemipour *et al.* study, regarding the evaluation of correlation between clinical and histopathological oral and maxillofacial lesions diagnosis in Kerman university(1375-84), like other studies, in two third of the cases, clinico-pathological diagnoses concur with each other [10] . Moreover, Ghassemi Moridani and colleagues showed that the agreement rate of clinic-pathological diagnosis of patients with oral disease in oral medicine department of Mashhad University was 81.2 % [11]. The most agreement rates were 89.5% for salivary glands and the least CI was 60.3% which was seen in odontogenic lesions. Hashemipour and colleagues reported that the most and the least agreement were for salivary glands (89.5%) and the odontogenic lesions (60.3%) respectively, which was

similar to the rate we have observed and concluded that there is a significant correlation between the types of the lesion with clinico-pathological agreement as we did [10]. In Ghassemi et al's study, this agreement rate, the probable weaknesses and degree of the agreement in different lesions were assessed; mucocutaneous and retentive salivary glands lesions demonstrated the highest correlation [11]. The two most correlation agreement was shown in mucocutaneous and retentive salivary glands lesions. This result was similar to Hosseinpour's and Ghassemi Moridani's study that showed the highest agreement rate for mucocutaneous lesions [10, 12]. The highest CI Among different specialists was 78.6 % which was reported in oral medicine specialists. The minimum rate was seen between periodontists, this lower rate could be due to the type of lesions usually treated by periodontists. Relatively, few studies have attempted to determine the correlation between the clinical and histopathological diagnosis in different specialists, for example Seifi reported that the highest clinicopathological agreement was seen in oral and maxillofacial surgeons (68.5%) which is in agreement with our results in quantity but not in ranking. In accordance with the results of our study, they also reported the least CI was seen in cases sent by the periodontists.

CONCLUSION

Our study showed that there is significant difference between the speciality of surgeon and also type of lesions with clinico-pathological agreement rate. According to the differences demonstrated in our study, it is concluded that interactions between clinical and paraclinical teams lead to more accurate diagnosis and treatment planning. On the other hand, more practical training is recommended for oral disease diagnosis, especially in lesions with low agreement. Given that compliance rates of the clinico-histopathological diagnoses of odontogenic lesions were lower than other lesions, it is suggested that paraclinical evaluations should be considered for the definitive diagnosis of oral lesions. So for better patient management, the clinicians should be awareness about differential diagnosis of lesions and significance of them. Patient management is a team work plan. In final it should be mention that our study was descriptive and also file-based, so we propose more top level study for future.

ACKNOWLEDGMENT

REFERENCES

1. Seifi S, Hoseini SR, Bijani A. Evaluation of clinical versus pathological difference in 232 cases with oral lesion. Caspian Journal of Internal Medicine. 2010 Jan 15;1(1):31-5.
2. Fischer DJ, Epstein JB, Morton TH, Schwartz SM. Interobserver reliability in the histopathologic diagnosis of oral pre-malignant and malignant lesions. Journal of oral pathology & medicine : official publication of the International Association of Oral Pathologists and the American Academy of Oral Pathology. 2004;33(2):65-70.
3. Önem E AE, Guneri P, Ünal T, Boyacioglu H Oral lesion diagnosis dilemma: Correlation between clinical and histological diagnosis. A sample study. . SÜ Dişhek Fak Derg 2010;19:40-6.
4. Jaafari Ashkavandi Z RG, Mardanifard HA. Evaluation of the Agreement Rate of Clinical and Histopathologic Diagnosis in Patients Referring to Oral Pathology Department of Shiraz Dental School, 2001-2006. Shiraz Univ Dent J 2010 11(2):161-8.
5. Bokor-BratiÊ1 M VN, MirkoviÊ S. Correlation between clinical and histopathologic diagnoses of potentially malignant oral lesions. Arch Oncol. 2004;12(3):145-7.
6. Vázquez-Álvarez R, Fernández-González F, Gándara-Vila P, Reboiras-López D, García-García A, Gándara-Rey JM. Correlation between clinical and pathologic diagnosis in oral leukoplakia in 54 patients. Med Oral Patol Oral Cir Bucal. 2010 Nov 1;15(6):e832-8.
7. Neville BW AC, Boquot JA. Oral and maxillofacial Pathology. 3 ed. Philadelphia: Saunders; 2009.
8. Deihimi P FM. Correspondence of clinical diagnosis with histopathologic diagnosis of oral lesions in patients referring to oral pathologic department of Isfahan dentistry school from 1370 to 79. Shahid Beheshti Univ Dent J. 2004;22:38-48.
9. Saravani S, Tavakoli Amin M, Kadeh H. Compatibility Rate of Clinical and Histopathologic Diagnosis of Oral Lesions in Zahedan Dental School during 1999-2015. Journal of Dental Materials and Techniques. 2016;5(3):138-44.
10. Hashemipour M RM, Mojtahedi A. A Comparative Study of Clinical Diagnosis and Histological Reports of Oral and Jaw Lesions. Shiraz Univ Dent J. 2009;10(1):31-7.
11. Ghassemi Moridani Sh MZ, Sazesh Rahbar Joo F. Correlation between clinical and histopathological diagnosis or oral lesion surgery in the city of Rasht. (2000-2002). Journal of Islamic Society of dentists. 2005;17:95-9.
12. Hossein Pour Jajarm H MN. A comparative study on the clinical diagnosis and pathology report of patients undergone biopsy at Department of Oral Medicine of Mashhad Dental School from 2002 until 2004. Mashahd Univ Med Sci 2006; 30:47-54.