



Original Article

Histopathology of orodental biopsies

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Radicular Cyst;
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Fibroma.

ABSTRACT

Background: Tissue diagnosis is an essential step to come to a confirmed diagnosis in oral lesions where clinical examination alone can often be difficult and inaccurate. The aim of this study was to assess the use of histopathological services by the dental department and to correlate the clinicopathological diagnosis.

Materials and Methods: This is an histopathological database analysis of dental biopsies in 23 years from 1989 to 2012 in Patan Hospital. The variables studied were age, sex, clinical and histopathological diagnosis. SPSS version 16 was used as an analytical tool.

Results: Out of 396 dental biopsies 203 (51.3%) were females and 193 (48.7%) were males with mean age 34.34 years and standard deviation of 17.9 years. The neoplastic and non neoplastic conditions were 44% and 56% respectively.

Conclusion: Most diagnoses were benign in nature and had an inflammatory etiology.

INTRODUCTION

Biopsy procedure is an important tool to come to a confirmed diagnosis in most of the surgical procedures where clinical examination alone can often be difficult and inaccurate. This holds true for the early detection of precancerous lesions. There are a number of reasons for the limited use of diagnostic histopathology services by the General Dental Practitioners. The primary reasons maybe due to lack of perceived value of biopsy in diagnosis, inadequate skill to perform biopsy and fear of clinical diagnostic error.

The aim of this study was to assess the use of histopathological services by the dental department, to correlate the clinicopathological diagnosis and to find out the histopathological spectrum oral lesions detected at Patan Hospital.

MATERIALS AND METHODS

A limited database was reviewed and analyzed for the 396 dental biopsies taken in 23-year period from 1989 to 2012 at Department of Dentistry of Patan Hospital. Before performing analysis permission was taken from institutional review committee. The variables entered in the database were date, age, sex, treating dentist, clinical diagnosis and histopathological diagnosis. The tissue processing in the Department of Pathology used to be grossing of the specimen, processing in tissue processor, embedding and cutting into sections of 4 microns. All the slides were then stained with Hematoxyllin and Eosin stain and were reviewed by Pathologists.

RESULTS

The analyzable data of dental biopsy were 390. Out of these 390 cases 203 (51.3%) were females and 193 (48.7%) were males. The histopathological diagnoses with disease

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Table 1: Histopathology report and disease category

HISTOPATH REPORT	DISEASE CATEGORY				Σ
	Inflammatory	Benign Cystic lesion	Benign Neoplasia	Malignant Neoplasia	
Abscess	4				4
Ameloblastoma			9		9
Carcinoma				20	20
Cyst		62			62
Cysticercosis	1				1
Dysplasia	1		1		2
Epulis			14		14
Fibroma			53		53
Fibrosis	13				13
Giant cell Tumour				1	1
Granulation tissue	9				9
Granuloma	22				22
Haemangioma			2		2
Inflammatory	35				35
Leukoplakia	1		1		2
Lichenplannus	28				28
Lymphoma				2	2
Miscellaneous	6	1	25		32
Mucocele		9			9
Myxoma			1		1
Neuroma			1		1
Odentoma			1		1
Osteomyelitis	8				8
Papilloma			21		21
Pleomorphic			11		11
Polyp			12		12
Reactive	17				17
Sialadenitis	2				2
TB Lymphadenitis	2				2
Σ	149	72	152	23	396

category are tabulated (Table 1). Neoplastic and non neoplastic conditions were 44% and 56% respectively. Benign and malignant tumors were found to be 38% and 6% respectively (Chart 1). Mean age was 34.34 years, median of 30 years and standard deviation of 17.9 years (Chart 2). Age was not mentioned in 20 cases. Database reveals that no biopsy was sent to the lab in the years 1997 to 2000 (Chart 3). Maximum number of cases of biopsy was sent in the years 2004 and 2005.

DISCUSSION

The present study demonstrated that the overall distribution of the lesions analyzed was similar to the studies done in United Kingdom¹, United States of America²⁻³ and Brazil.⁴

Most of the specimens analyzed over the period of 23 years in this hospital were inflammatory lesions or benign cystic lesions.

Majority of the specimen analyzed fell in to inflammatory lesions, corroborating data from various studies.^{2,3} The frequency of periampullary inflammatory lesions was similar to that reported by Jones and Franklin.² This may be because the patients visited the dental department only to treat the decayed teeth which is usually associated with periapical inflammation. Inflammatory hyperplasia was the major entity seen amongst the inflammatory group with a total of 35 cases, which is consistent with the data of other studies.^{1,3}

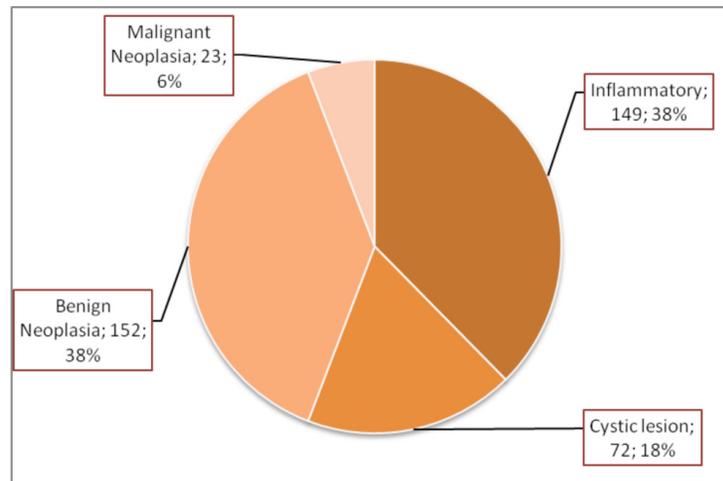


Chart 1: Disease category Chart 1: Disease category.

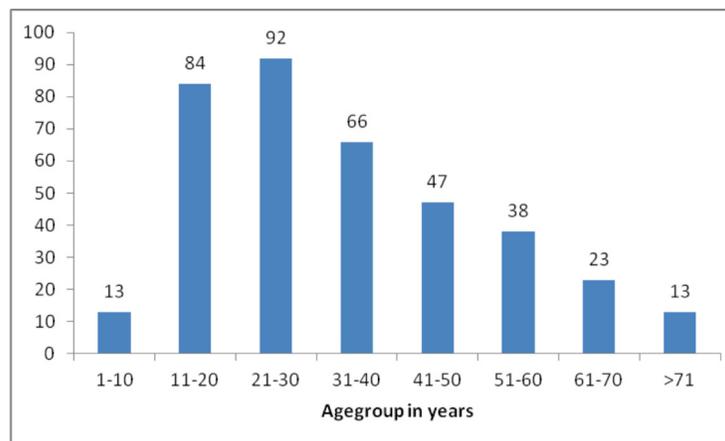


Chart 2: Distribution of cases by Age group (n=376).

Lichen planus was seen in 7% of the total cases which is much higher than those seen in other countries like Japan with only 0.7% and Sweden 1.9%.⁵ This large population of patients may be due to chewing tobacco.

Fibroma was the most frequent diagnosis in the benign tumor group, supporting previous findings reported in many literatures.² Squamous papilloma was seen in 25 cases similar to studies done by Jones and Franklin. However, in their study they had found higher occurrence of squamous papilloma and lower proportion of fibroma.

Malignant tumors accounted for 6% of all specimens, which is in accordance with the reports of other studies.^{2,3} Males older than 50 years were more closely associated with squamous cell carcinoma. Leukoplakia, which is the premalignant condition was seen in 2 cases and is associated with the long term exposure to tobacco and alcohol.

In the current study 62 cases (16%) were cystic lesions. Out of these cysts 26 cases (42%) were Radicular cyst and 24 cases (39%) were Dentigerous cyst. In a study done by Manor E et al Radicular cysts was seen in 48% cases.⁶ Odontogenic cysts are defined as those cysts that arise from odontogenic epithelium and occur in the tooth-bearing regions of the jaws. It is usually considered that proliferation and or/ degeneration of this epithelium leads to odontogenic cyst development. Most of the odontogenic cysts are benign in nature but some of it may exhibit aggressive and destructive behavior locally.⁷ Odontogenic cysts and tumors develop during or after the formation of teeth.⁸ Many of these lesions are asymptomatic, particularly in the early stages and are discovered incidentally. The most common symptom is pain, which may or may not be accompanied by swelling. There may also be paresthesias and tooth mobility. The distribution of jaw cysts according to diagnosis in a general population is: Radicular cysts (RC) 56%, Dentigerous cysts (DC) 17%, Nasopalatine duct

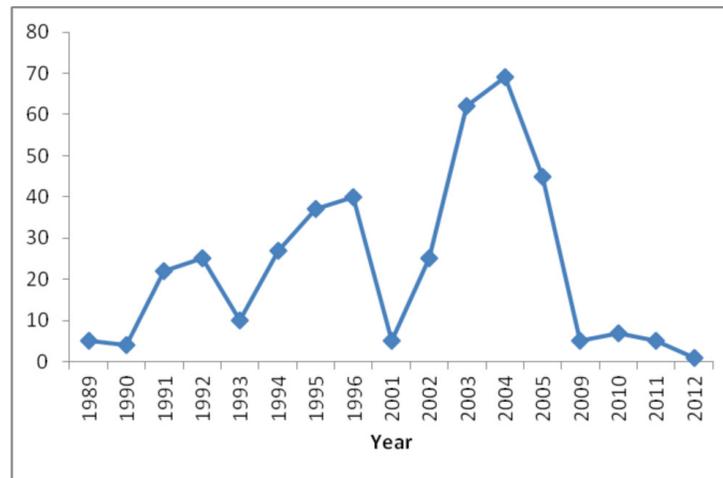


Chart 3: Dental Biopsy Samples by Year (n=394).

cysts (NPDC) 13%, Odontogenic keratocysts (OKC) 11%, Globulomaxillary cysts 2.3%, traumatic bone cysts (TBC) 1.0% and Eruption cysts (EC) 0.7%.⁶

Fibrous hyperplasia (in the form of fibroepithelial polyp) was seen in almost 25 cases which is similar to the findings of Williams et al⁹, where fibroepithelial polyps were one of the common lesions submitted.

It has been demonstrated that some factors, such as age, gender, socioeconomic status, prosthesis use, smoking and alcohol consumption, maybe associated with oral lesions.¹⁰ Unfortunately, these data are frequently not informed by surgeons when histopathological examination is requested. The associations related to gender and age observed in the present study could be explained by the cumulative effects of smoking and alcohol consumption. Since the information regarding behavioral factors was not available in the files of the laboratory, we were unable to evaluate these factors in the present study.

CONCLUSION

In conclusion, most diagnoses were benign in nature and had an inflammatory etiology. Age and gender may be considered demographic characteristics to be used for the differential diagnosis of major oral lesions.

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