

Incidence of Common Periapical Lesions -An Intra Oral Periapical Radiographic Study

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Abstract

Aim- The aim of present study is to identify the incidence of common periapical lesions by analysing the periapical radiographs of patients.

Method- A retrospective study of 200 Intra-oral periapical radiographs were studied over a period of 2 months(March-April 2015) . Radiograph of patients above 10years were examined in study and the periapical changes were noted. Only periapical lesions including permanent teeth were included in the study.

Background - Periapical changes occur as a sequelae of pulpal and periapical pathology which leads to either bone resorption or bone deposition. This radiographic study is to determine the incidence of the common periapical lesion occurring among patients .

INTRODUCTION

Dental caries and its sequelae are the commonest dental disease amongst patients which make them to seek dental treatment. At present, the majority of the treatments that are performed in the clinic are due to disease involving the dental pulp and periapical . Dental pulp is a richly vascularized and innervated tissue, enclosed by surrounding tissues that are incapable of expanding, such as dentin. It has terminal blood flow and small-gauge circulatory access the periapical region. The periapical disease is almost inevitably preceded by pulp disease(1).Pulpal pathosis is just a reaction to bacteria and bacterial products. It can be a direct response to caries, microleakage of bacteria around fillings and crowns, or either physical or iatrogenic. The pulp responds to these by an inflammatory process. Histologic changes associated with inflammation may occur even with a relatively mild stimulus to the tooth(2). Pathology in the area surrounding the apex of a root, i.e. periapical pathology, is most commonly a sequel to chronic pulpitis or pulp necrosis. Initially there is inflammation of the apical periodontal ligament. If untreated, the apical periodontitis progresses to involve the surrounding bone, resulting in destruction of the bone, which is replaced by soft tissue. This is evident as an apical rarefaction on a radiograph. Periapical lesions may have odontogenic or nonodontogenic origins (3-5).To initiate correct treatment , correct diagnosis has to be made . Both clinical diagnosis supplemented by good radiographic diagnosis play a vital role in this.

METHODOLOGY

The purpose of the study was to evaluate the incidence of common periapical lesions by reviewing 200 periapical radiographs of patients who visited Saveetha Dental College, Chennai for seeking dental care. Radiographs of patients >10years were included in the study. The following data was recorded from each patients report and radiograph : Gender of patient, age group ranging from 10 years and above, number of maxillary tooth examined, number of mandibular tooth examined, number of anterior tooth examined and number of posterior tooth examined,

total number of radiograph which showed periapical lesion, the tooth number which has highest prevalence of periapical lesion, types of periapical changes. The radiographic changes were correlated to clinical signs and symptoms. The data was statistically analysed.

RESULT

The present study population included 200 patients radiograph .Out of these 134 were male and 66 were female patients. Age group factor: 24 were ranging from age group of 10-20 years , 76 were ranging from age group of 20-30years , 58 were ranging from age group of 30-40years , 32 were ranging from age group of 40-50years and 10 were ranging from age group above 50. Out of which total of 87 maxillary tooth was examined and 113 of mandibular tooth were examined. Total of 50 anterior tooth were examined and total of 150 mandibular tooth were examined. Out of 200 patients radiograph examined total number of 20 radiograph showed periapical radiolucency. Out of 20 patients who reported with periapical changes a total of 17 patients reported symptomatic and 3 patients reported asymptomatic. Out of 20 periapical lesions 15 radiographs were identified with periapical chronic abscess, 3 radiographs were identified with periapical granuloma and 2 radiographs were identified with periapical cyst. Mandibular molar had highest incidence of periapical lesion followed by maxillary central and lateral incisor.

DISCUSSION

Periapical Abscess, Periapical granuloma and Periapical cyst are commonly reported periapical lesion. The incidence of periapical abscess, periapical granuloma and periapical cyst vary from study to study. In our study the incidence of periapical abscess was 75%(n=15), periapical granuloma was 15%(n=3) and periapical cyst was 10%(n=2). The difference in radiographic diagnosis of periapical lesion amongst various study could be due to difference in radiographic diagnostic criteria employed. The mean age of periapical lesions in our study was 40 years. The incidence of periapical lesions in our study was more in male population. The presence of periapical lesion

was slightly more in maxillary teeth (n=11), compared to mandibular teeth (n=9). It was more in single rooted anterior teeth(n=8), compared to multirooted posterior tooth(n=3) in maxilla while in mandibular arch it was more in posterior teeth (n=6) compared to anterior teeth(n=3). Often these periapical lesions were not subjected to histopathological examinations, treatment is initiated based on clinical and radiographic changes. Therefore in conclusion, periapical lesions are commonly encountered during routine radiographic examination and it is desirable to subject them to histopathological examination for accurate diagnosis.

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Males	134
Females	66
Age Group (10-20)	24
Age Group (21-30)	76
Age Group (31-40)	58
Age Group (41-50)	32
Age Group >50	10
Maxillary Tooth	87
Mandibular Tooth	113
Anterior Tooth (Incisor & canine)	50
Posterior Tooth (Premolar & Molar)	150
Patients Periapical Lesions	20
Symptomatic	17
Asymptomatic	3

Periapical lesions	N
Chronic periapical abscess	15
Periapical granuloma	3
Periapical cyst	2
Condensing osteitis	0
Focal sclerosing osteomyelitis	0

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Tooth-Pairs with Periapical Lesions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	11	2	1.0	10.0	10.0
	12	3	1.5	15.0	25.0
	13	1	.5	5.0	30.0
	14	1	.5	5.0	35.0
	16	1	.5	5.0	40.0
	21	1	.5	5.0	45.0
	22	1	.5	5.0	50.0
	27	1	.5	5.0	55.0
	31	1	.5	5.0	60.0
	36	4	2.0	20.0	80.0
	41	1	.5	5.0	85.0
	42	1	.5	5.0	90.0
	46	1	.5	5.0	95.0
	48	1	.5	5.0	100.0