

Prevalence of Pulp Stones In Urban and Rural Population of Latur Maharashtra and the Challenges Encountered: An Endodontic Perspective

Dr.Sunanda Gaddalay¹,Dr Mariyam Pathan²,Dr.Anita Kale³,
Dr.Yogesh Ahhirao⁴

¹(Prof. HOD.Department of conservative Dentistry & Endodontics, MIDSr Dental College, Latur India.)

²(P.G. 2nd Year Department of conservative Dentistry & Endodontics, MIDSr Dental College, Latur India)

³(Prof. Department of conservative Dentistry & Endodontics, MIDSr Dental College, Latur India.)

⁴(Asso.Prof.Department of conservative Dentistry & Endodontics, MIDSr Dental College, Latur India.)

Abstract:

Background: Pulp stones are discrete calcified masses found in the dental pulp. Etiology and development of the pulp stones are largely unknown..

Aim: To determine the prevalence of pulp stones in urban and rural population of latur, Maharashtra

Material And Methods: 250 dental out patients within age group of 18 to 70 years were involved in the study. Bitewing radiographs of right and left side of each patient was taken using intraoral radiographic unit, presence or absence of pulp stones was recorded .Data was analyzed by statistics program for windows version

Results: pulp stones were detected in 112 out of 250 patients.prevalence of pulp stones was 44.8%.pulp stones occurrence was higher in males than females, higher in mandible 51.4% than maxilla 48.6%,higher on left side than right side, higher in molars than premolars, and higher in first molar than second molar.

Conclusion: pulp stones can hamper endodontic treatment but with advances in endodontic instruments and techniques this is unlikely to alter their relevance to clinicians

Keywords: Bitewing radiography, Endodontics,Pulpstones.

I. Introduction

Pulp stones are discrete calcified bodies in the dental pulp of healthy, diseased and unerupted teeth (1), frequently found on bitewing and periapical radiographs .stones may be free Attached or embedded (2).occurrence of pulp stones is more in molars than followed by premolar. (3)Etiology of pulp stones is not exactly known, several factors have been implicated in pulp stone formation like caries, deep restoration³(4), chronic inflammation, interaction between epithelium and pulp tissue(5), circulatory disturbance in pulp(6), age,(7) genetic predisposition(8), Orthodontic tooth movement(9)&calcifying nanoparticles(2). Pulp stones obliterate the pulp chamber making it difficult for access during root canal treatment. Pulp stones may cause discomfort & pain so radiographic interpretation of pulp stones is helpful in diagnosis and formulating a treatment plan.

II. Material And Methods

The study was conducted in the Department of conservative dentistry & Endodontic MIDSr dental college & hospital latur over a period of 4 months. A total of 250 dental out patients within age group of 18-70 years were randomly involved in this study. Ethical clearance was taken prior to commencement of study. Patients were informed about the study written consent was obtained. Detailed case history was taken in the designed format that included patient information regarding age, gender, occupation, medical and dental history, habits, dental status,

DMFT index, attrition, abrasion & periodontal status. Inclusion criteria- maxillary and mandibular molars and premolars of both sides, teeth with shallow fillings. Exclusion criteria- grossly destructed teeth, deep fillings, teeth with crown & bridges, wisdom teeth & poor radiographs. Bitewing radiographs of molar right & left side of each patient was taken using intra oral radiographic unit operating at 70 KVP & 8MA by standard exposure conditions. Radiographs were interpreted for the presence or absence of pulp stones by two different examiners. Only those radiographs which had similar interpretation were considered & those radiographs which had different opinion was cross examined by senior faculty member analysis were performed by SPSS statistics .Program for windows version (spss version)

III. Results

Prevalence of pulp stones in both the gender was 44.8% ,pulp stones occurrence was higher in males than females, higher in mandibular arch than maxillary arch, higher in molar teeth than premolar, higher in right side than left side&Higher in first molar than second molar.

IV. Discussion:

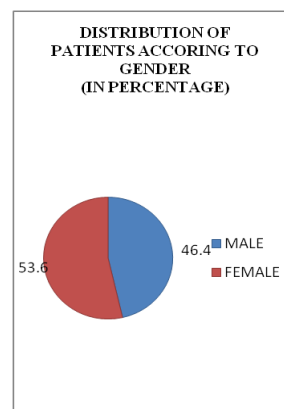
In the present study incidence of pulp stones has been reported to be 44.8% which is higher than the results of the study by Ranjitkar et.al(10)10.3% and Baghdady et.al(1)14.8%Prevalence of pulp stones was higher in males than females.However literature states that prevalence is more common in females than males the reason might be bruxism that causes longstanding irritation on dentition and it is more common in females Accordingly arch prevalence was higher in mandibular arch than maxillary which is in accordance with the study of Baghdady et.al.(1)Prevalence of pulp stones was higher in molars than pre molars in literature the possible explanation is molars are the largest teeth in the arch that provide better supply of blood to pulp tissue and have the strongest force in the arch, that leads to greater precipitation for calcificationPrevalence of pulp stones was higher in first molar than second molar which is in agreement with the study by Baghdady(1)et al &ranjitkar(10)et al.

According to results of our study pulp stone prevalence was more on left side than right side which is in agreement with studies by Ranjitkar(10)&sisman(12)pulp stones can be detected accidentally on a radiograph ,however pulp stone detection is possible when diameter is more than 200mm(5)various conditions in which pulp stones are commonly found includes Dentin dysplasia type2,familial expansileosteolysis,Elfinfaciessyndrome,tumoralcalcinosis,Elhers-danlos syndrome type1,osteogenesis imperfect type1(4,10).

Bitewing radiography was preferred over periapical and panoramic technique ,as distortion is common in latter.In literature various studies have found a correlation between pulp stones and various systemic diseases like cardiovascular diseases,hypertension,type 2 diabetes mellitus, gastritis.Edds et al(13) found incidence of pulp stones was higher in subjects with cardiovascular diseases.so detection of pulp stones can be helpful in diagnosis of systemic diseases.

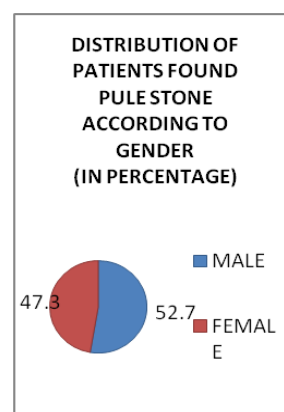
Distribution of Patients According To Gender

GENDER	NUMBER	PERCENTAGE
MALE	116	46.4
FEMALE	134	53.6
TOTAL	250	100



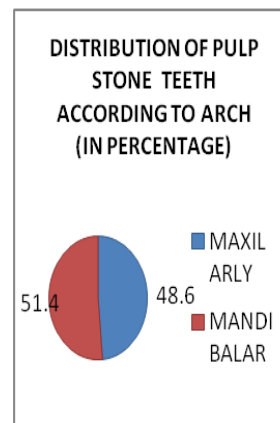
Distribution Of Patients Found Pulp Stone According To Gender

GENDER	NUMBER	PERCENTAGE
MALE	59	52.7
FEMALE	53	47.3
TOTAL	112	100



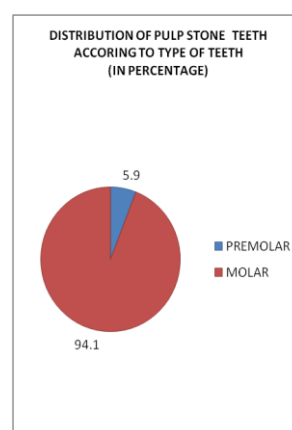
Distribution Of Pulp Stone According To Arch

ARCH	NUMBER	PERCENTAGE
MAXILARLY	154	48.6
MANDIBALAR	163	51.4
TOTAL	317	100



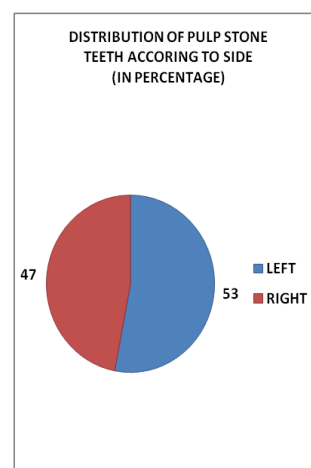
Distribution of Pulp Stone Teeth According To Type of Teeth

TYPE	NUMBER	PERCENTAGE
PREMOLAR	19	5.9
MOLAR	298	94.1
TOTAL	317	100



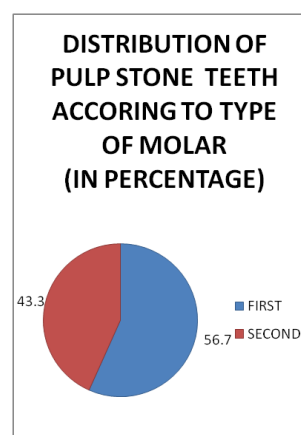
Distribution of Pulp Stone Teeth According To Side

SIDE	NUMBER	PERCENTAGE
LEFT	168	53
RIGHT	149	47
TOTAL	317	100



Distribution of Pulp Stone Teeth According To Molar Type

TYPE	NUMBER	PERCENTAGE
FIRST	169	56.7
SECOND	129	43.3
TOTAL	298	100



V. Conclusion

Pulp stone can hamper endodontic treatment in hindering and negotiation of canals but recent advances in endodontic instruments and techniques its effect is largely neutralized for the clinician. detection of pulp stones can be important factor in diagnosing systemic diseases.

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