ORIGINAL ARTICLE

ASSESSMENT OF PREVALENCE OF DENTAL PULP CALCIFICATIONS IN A KNOWN POPULATION: A CROSS-SECTIONAL STUDY

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ABSTRACT:
Background: Pulp stones can be named valid or false, the previous being made of dentine and lined by odontoblasts, though false pulp stones are framed from deteriorating cells of the pulp that gets mineralized. The neurotic impact of aggravation by the microorganisms of dental caries on the pulp tissue can cause avascular divider damage, bringing about the statement of calcium salts inside the tissue. Others are orthodontic tooth development, idiopathic and hereditary inclining elements. Hence, we planned the present study to assess the prevalence of calcifications in the pulp tissue of the subjects in a known population.

Materials & methods: The present study was included prevalence of pulp calcifications in a known population. Subjects with crowns, spans, caries, orthodontic treatment, bruxism, steady loss, and traumatic teeth were excluded in the review test. Considering that teeth with profound fillings and caries injuries are more inclined to have mash stones, just teeth which were non-carious and unrestored were incorporated. The radiographs were translated by two inspectors utilizing a standard review box with surrounding light. Those taken at the wrong angulations, improper introduction, and handling flaws were prohibited. Unequivocal radiopaque bodies seen inside the mash chambers and root trenches of the every one of the teeth were scored by the sorts grouped. All the results were analysed by SPSS software. Chi- square and student t test were used for the assessment of level of significance. Results: Among Maxilla and Mandible cases, Type I was observed in 110 and 89 cases respectively. Among maxilla and mandible cases, type II and type III were observed in 15, 18, 14 and 20 cases respectively. Higher prevalence of pulp chambers was seen in females and in maxilla. Conclusion: Pulp calcifications care commonly encountered in the maxilla of females.

Key words: Calcification, Prevalence, Pulp.

INTRODUCTION

Pulp stones (PS) are discrete calcified masses found in the dental mash, in the pulp tissue or end up noticeably joined to or implanted into the dentine.¹ Basically, pulp stones can be named valid or false, the previous being made of dentine and lined by odontoblasts, though false pulp stones are framed from deteriorating cells of the pulp that gets mineralized. The arrangement of pulp stones is as yet something of a puzzle.², ³ Thinks about demonstrate that a high recurrence of cell islands, thought to be of epithelial birthplace, were watched together with pulp stone development in teeth that had been subjected to exploratory interruption. Various inclining components, including maturing, caries, agent methodology, and in addition periodontal sickness have been accounted for.¹, ⁴ The neurotic impact of aggravation by the microorganisms of dental caries on the pulp tissue can cause avascular divider damage, bringing about the statement of calcium salts inside the tissue. Others are orthodontic tooth development, idiopathic and hereditary inclining elements.⁵, ⁶, ⁷ Hence, we planned the present study to assess the prevalence of calcifications in the pulp tissue of the subjects in a known population.

MATERIALS & METHODS

The present study was included prevalence of pulp calcifications in a known population. Ethical approval was taken from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. At the point when the radiograph alone was prompted for different dental treatment in patients where idiopathic dental mash calcification was discovered, all-encompassing radiographs were informed to preclude the nearness with respect to dental mash calcification in other teeth. Subjects with crowns, spans, caries, orthodontic treatment, bruxism, steady loss, and traumatic teeth were excluded in the review test. Considering that teeth with profound fillings and caries injuries are more inclined to have mash stones, just teeth which were non-carious and unrestored were incorporated. Kids underneath the age of 10 years were rejected from the review. The radiographs were translated by two inspectors utilizing a standard review box with surrounding light. Those taken at the wrong angulations, improper introduction, and handling flaws were prohibited. Unequivocal radiopaque bodies seen inside the mash chambers and root trenches of the every one of the teeth were distinguished as mash stones and were scored by the sorts grouped. Endeavors were
made to decide the subtle elements of the mash stones, for example, sorts as indicated and area in the mash chamber root trench. To guarantee the exactness of the finding, just the teeth that were affirmed by our two inspectors to have mash stones were scored as present. Those teeth about which both our inspectors were uncertain were re-evaluated by our senior dental radiologist and scored by his conclusion. All the results were analysed by SPSS software. Chi-square and student t test were used for the assessment of level of significance.

RESULTS
Table 1 shows the distribution of Types of calcification in maxilla and mandible. Among Maxilla and Mandible cases, Type I was observed in 110 and 89 cases respectively. Among maxilla and mandible cases, type II and type III were observed in 15, 18, 14 and 20 cases respectively. Table 2 shows the Types of calcification in different gender. Higher prevalence of pulp chambers was seen in females and in maxilla.

Table 1: Types of calcification in maxilla and mandible

<table>
<thead>
<tr>
<th>Type of calcification</th>
<th>Maxilla</th>
<th>Mandible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>110</td>
<td>89</td>
</tr>
<tr>
<td>Type II</td>
<td>15</td>
<td>38</td>
</tr>
<tr>
<td>Type II A</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Type II B</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>Type III</td>
<td>14</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 2: Types of calcification in different gender

<table>
<thead>
<tr>
<th>Type of calcification</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>30</td>
<td>111</td>
</tr>
<tr>
<td>Type II</td>
<td>20</td>
<td>33</td>
</tr>
<tr>
<td>Type II A</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Type II B</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Type III</td>
<td>10</td>
<td>26</td>
</tr>
</tbody>
</table>

DISCUSSION
Pulp stones may occur in one or all of the teeth in one person, even in unerupted or impacted teeth. Located in the pulp cavity or root canal, these stones often narrow or even obstruct the access to the apical point root canal. The calcification of pulp tissue might lead to the failure of root canal therapy and loss of the teeth. Hence, we planned the present study to assess the prevalence of calcifications in the pulp tissue of the subjects in a known population.

In the present study, we observed higher prevalence of pulp calcifications in females and in maxillary arch. Ravanshad S et al assessed the prevalence of pulp stones in a sample of Iranian population and to report its occurrence regarding gender, dental arch, tooth type and dental status. Dental records of patients who attended Shiraz Dental School were selected randomly. Only bitewing and periapical radiographs of maxillary and mandibular permanent posterior teeth were studied. Teeth were classified in the case of presence or absence of pulp stones, and the prevalence was analyzed in different gender, tooth types, dental arch, and dental status (intact, carious, or restored) groups. Statistical analysis was performed using X(2) test. Of the 652 examined subjects, 306 (46.9%) had one or more teeth with pulp stones. Of the 8244 posterior teeth examined, 928 (11.25%) had pulp stones in the pulp chamber. These pulp stones were detected in 76 (37.6%) of males and 230 (51%) of females. The frequency of pulp stones among different teeth between maxillary and mandibular arches had almost a similar pattern. Among teeth demonstrating the condition, first molars were the most prevalent, followed by second molars. In maxillary molars the frequency of occurrence (26%) was higher than mandibular molars (18.7%). No significant difference was found between dental status and pulp stones occurrence. The occurrence of pulp stones noted in this study was significantly higher in female, molar teeth than premolar and 1st maxillary molar than mandibular. There was no significant association between pulp stone and condition of the crown. Nayak M et al determined the correlation between pulp stones and cardiovascular disorders, Type II diabetes mellitus, autoimmune disorders and dental wear defects. This study also aims to evaluate the frequency of pulp stone in population of Dakshina Kannada district (Karnataka, India) and to determine association of pulp stones in different sexes, tooth type, dental arches and sides. A total of 1432 teeth of five groups were examined, comprising of patients with C.V.S. disorders; Type II diabetes mellitus, autoimmune disorders, dental wear defects and control group. Teeth were examined under 2X magnification on radio visiograph (RVG) and conventional intra-oral periapical radiograph. The presence or absence of pulp stones were recorded. Pulp stones were found in 134 (9.35%) of 1432 teeth detected. Significantly, higher numbers of pulp stones were recorded in patients with cardiovascular disorder (15.86%) than other groups. The occurrence of pulp stones were significantly higher in molars (18.29%) than premolars (6.6%) and in maxillary arch (12.36%) than in mandibular arch (5.95%). No significant difference was found between sexes and sides. Positive correlation was found between systemic disorder and pulp stones. Cardiovascular patients had maximum number of pulp stones followed by dental-wear defects and least number of pulp stones were evident in control group.

CONCLUSION
Pulp calcifications care commonly encounters in the maxilla of females. So, special care should be taken while planning treatment of such cases.

REFERENCES

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Conflict of interest: None declared  
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