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Prevalence of Coronal Pulp Stones in Mandibular First and Second Molars

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Abstract: ***Introduction*: Pulp stones more often occur in molars than in premolars and incisive. The aim of this study is to determine the prevalence of dental pulp stones in accordance with mandibular first and second molars. *Materials and Methods*: The study was conducted at the University Dental Clinic Centre in Skopje "St. Panteleimon". Were included random samples 150 patients aged between 20-60 years, or 3108 teeth, meanwhile using an appropriately designed survey questionnaire. The X-ray assessment of the jaws was being made by subjecting the suspected teeth to the Panoramix and retroalveolar X-ray according to Dick. Statistically computer analysis was confirmed to the 204 teeth – mandibular molars. *Results*: From 150 patients or 3108 teeth, 623 teeth (20.04%) have pulp stones. From 623 teeth with pulp stones 425 (68.2%) – molars. The results obtained from the carried out examinations showed that: 425 teeth – molars: 204 (48 %) – in mandible. 204 mandibular molars: 90 teeth (44.1%) – low fist molars, and 114 teeth (55.8%) – low second molars. The variation is significant i.e. Z = 2.264; P = 0.024. *Conclusion*: The prevalence of pulp stones of the mandibular first and second molars enables faster and easier detection of dental calcifications, and consequently faster and easier pain provocateur diagnosis.***

Keywords: teeth, molars, pulp stones, prevalence, low first molars, low second molars, significant.

1. Introduction

When observed from therapeutic aspect, they appear to be of greater importance because they can make the access to the dental roots difficult or in some cases completely impossible, and they can also be the reason for groundless extraction of a tooth or a group of teeth. The fact that pulp stones are referred to as being provocateurs of pain with different intensity makes them cause difficulties in diagnosing.

Through the prism of literature findings there can be concluded that dental calcifications are not prevalent only at certain group of teeth.

Molars had statistically more pulp stones than premolars. Pulp stones were significantly more common in the maxilla compared with mandible [1].

Pulp stones is found significantly more in molars. There was no significant correlation with sex, increasing age, dental arches, and ethnic races [2].

They are identified to appear in both the dentitions (deciduous and permanent), but also in impact teeth, these findings were supported by Nitzan and his associates in year 1986 [3].

According to Moss Salentijn and Hendricks - Klyvert, diffused calcifications are usually located in the radicular part of the dental pulp, starting in the perivascular adventitia and the vascular wall [4,5].

2. Materials and Methods

The study was conducted at the University Dental Clinic Centre in Skopje and random samples of 150 patients aged between 20-60 years were included. These random samples were taken from a total of 150 patients or 3108 teeth, meanwhile using an appropriately designed survey questionnaire. The X-ray assessment of the jaws was being made by subjecting the suspected teeth to panoramic and retroalveolar X-ray according to Dick. From 150 random samples patients or 3108 teeth, 623 teeth have denticles. From 623 teeth with denticles - 425 – molars, 204 was mandibular molars.

Statistically computer analysis confirmed to the 204 mandibular molars.

3. Results

Below are the results obtained by application of the abovementioned methods, shown graphically (Table 1,2), roentgenologically (Figure 1,2) and statistically.

Table 1: Prevalence of pulp stones in total teeth of 150 patients, aged 20-60 years

Total teeth	molars	per cent	premolars	per cent	incisive	per cent
	N	n (%)	N	n (%)	N	n (%)
623	425	68.2%	172	27.6%	26	3.2%

Table 1 present according to the type of teeth.

Table 1 its presentation of the prevalence of dental calcifications according to the type of teeth.

- Prevalence of dental calcifications in molars is 68.2 per cent
- Prevalence of dental calcifications in premolars is 27.6 per cent and
- Prevalence of dental calcifications in incisive teeth 3.2 per cent

There is a significant difference; denticles in molars have more frequent prevalence compared to the premolars and the incisive teeth.

Out of 3108 analyzed teeth with denticles, 425 teeth (68.2%) were molars.Out of 425 molars, 204 (48 %) - lower molars.

Table 2: Prevalence of pulp stones in mandibular molars in both the sexes

Total upper molars	Lower first molars	Per cent	Lower second molars	Per cent
204	90	44.1 %	114	55.8%

Table 2 present prevalens of pulp stones according to the first and second lower molars.

- 204 (48 %) - lower molars
- 90 (44.1 %) - lower first molars
- 114 (55.8 %) - lower second molars in both the sexes.

--- Comparison of two proportions ---

Group 1 n = 204 p = 0.441
Group 2 n = 204 p = 0.558

The variation is: 0.117

Standard deviation of the variation: 0.04951

95% secure interval in the variation: - 0.214 to 0.01997

Z = 2.264 P = 0.024

The variation is significant i.e. Z = 2.264 P = 0.024
The variation is significant with both the sexes.

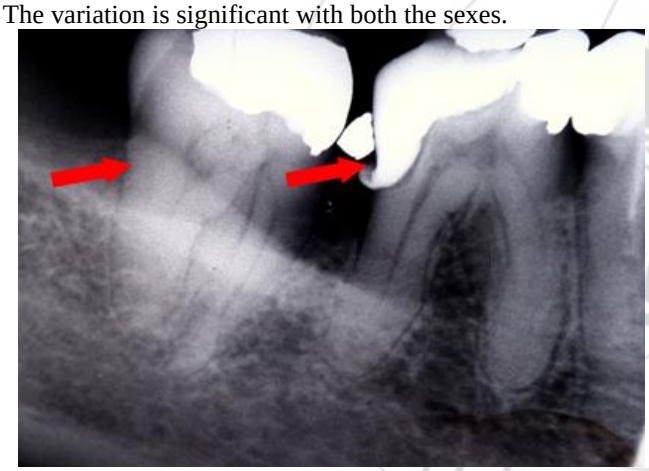

Figure 1: Pulp stones in low left first and second molars

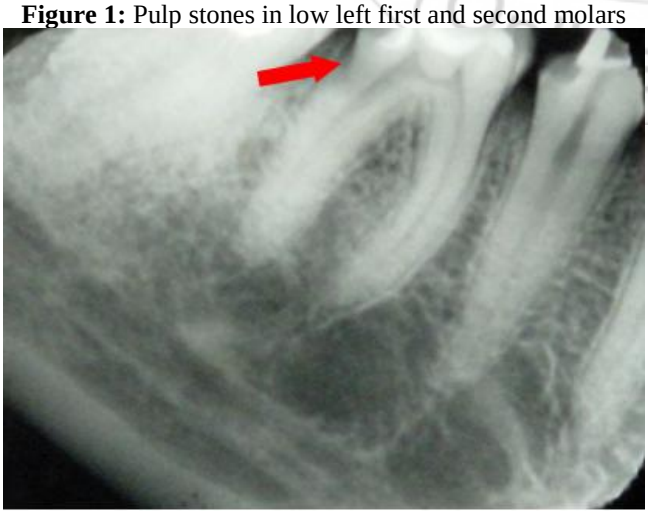

Figure 1: Pulp stone in low left first molar

4. Discussion

In the present study, the involved teeth were first and second molar in the mandible. Prevalens of pulp stones in the mandibular molars were significant in the second molar (Figure 1,2). Long-term influences of various types such as: caries, deep restorations, chronic inflammations of the pulp, trauma injuries of the tooth as well as orthodontic interventions relate to the appearance of calcifications [6,7,8]. Ranjitkar S.,Taylor JA., Townsend GC. , concluded that denticles as discreet calcified bodies in the dental pulp might be related to the tooth type, as well as with the dental arches. Their analyses showed a smaller prevalence of calcifications in the premolars (0.4%), compared to the molars (19.7%), which is a significant difference [9].

Due to the fact that up to present time there have been primarily presented single studies on dental calcifications, there was imposed the need for dental calcifications from clinical and roentgenological perspective, with special aspect on the diagnosis problem, especially regarding the intact gum, most often dislocated in a wrong therapeutic direction. Such oversight at a final instance could represent an intolerable diagnostic and therapeutic mistake that can lead to a system tooth/teeth loss [10].

Radiographic determination of dental calcifications according to the above mentioned findings enables relevant statistical analysis, presentation of frequency of the distributions in various types of teeth, which largely corresponds to the findings of other authors [11].

5. Conclusion

The variation is significant i.e., the denticles in second mandibular molars are prevalent according with first mandibular molars.

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