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Analysis of Radicular Dental Calcifications According to the Numeral Prevalence

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Abstract: ***Introduction: Pulp stones or dental calcifications, when are localized in the radicular dental pulp, are mineral deposits in the radicular pulp tissue. They are a sort of discrete calcification bodies with definite but very different numeral prevalence. The intention of the study is to present morphology of dental calcifications according to: the numeral prevalence. Materials and Methods: The present study was analyzed 60 extirpated pulps of teeth with endodontic diagnosis pulpitis chronic, and 40 pulps of extracted teeth, with the method of light microscopy, and by using standard differential histochemical stain. Results: The spherical calcifications show tendency of grouping according to their number, with average value of 3 calcifications per volume of one pulp. Irregular calcifications do not show tendency of grouping. Conclusion: With this study are confirm that dental radicular calcifications, can be with very different numeral prevalence.***

Keywords: extirpated pulps, pulps of extracted teeth, radicular calcifications**,** light microscopy, standard differential histochemical stain, numeral prevalence.

1. Introduction

Regarding the size, calcifications show a wide range of variations [1]. Dental radicular calcifications regarding the size, the findings show values smaller than 1 micron, up to 1cm measured per sample, with continuous areas of calcifications which fill in almost the whole pulp, in a longitudinal direction. The transverse section is within the limits of 20 to 200 microns, whereas the longitudinal section is up to 500 microns [2].

Regarding the shape, 2 groups are identified. The first group consists of calcifications of oval shape, which have a degree of bending similar to circle or spherical objects; these calcifications are nodular.

The second group of calcifications consists of calcifications which are of irregular shape, corner-like, except the bigger ones, which are relatively elongated [3].

2. Material and Method

Material for histological examination was provided with endodontic extirpation and vertical section during indicated teeth extraction.

The material consisted of extirpated vital pulp of teeth with chronic diseases and pulp of extracted teeth with chronic diseases with the method of light microscopy, and by using standard differential histochemical stain.

Histological analysis was made on the pulp of 60 extirpated pulps of teeth with pulpitis chronica (Table 1), and 40 extracted teeth with pulpitis chronica (Table 2).

Table 1. Distribution of 60 extirpated pulps of teeth with pulpitis chronic

Side	Left								Right							
Tooth	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
Maxilla		2	2	3	2	4	1	2	8	4	2		2	3		
Mandibula	2	1	3	2		2	3	2	6	2		2				

Table 2: Distribution of pulp of 40 extracted teeth with pulpitis chronica

Side	Left								Right							
Tooth	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
Maxilla	1	2	2	2	2			1	1		1	1	1	2	1	
Mandibula		2	2		2	1		2	2	1	1		1	3	4	2

For the purpose of histological processing there was used various different methods and procedures such as: fixation, decalcination, tissue processing, provision of paraffin sections, standard colouring, differential colouring, microscoping and morphological analysis with photographing.

3. Results and Discussion

The results from this study show that, the spherical calcifications show tendency of grouping according to their number, with average value of 3 calcifications per volume of one pulp. Irregular calcifications do not show tendency of grouping, though in average are more of number from spherical calcifications.

Regarding the shape, 2 groups are identified. The first group consists of calcifications of oval shape, which have a degree of bending similar to circle or spherical objects; these calcifications are nodular. The second group of calcifications consists of calcifications which are of irregular shape, corner-like, except the bigger ones, which are relatively elongated [3].

Dental calcifications under the term of dental pulp nodules were first mentioned by Norman and Johnston in 1921. This term has in time been replaced by the term denticles. In the recent literature the term "dental nodules" has appeared.

Regardless of their historical transformation in the nomination, they have been described as unique "calcifying changes including diffuse pulp calcification, i.e. dystrophic calcification".

The number and size of the stones vary, and hence one tooth can have 1 to 12 stones of different size. Moss Salejtin and Hedricks – Klyvert [3] described different prevalence of calcifications in teeth, which can vary from 7.5% to a high prevalence of 90%. [4,5,6,7,8,9,10,11,12,13,14].

Based on the symptomatology, the calculous presence is at times asymptomatic, but at other times painful. Their close location to the nerve bundles and their more massive dimension might lead to compression of the nerve endings provoking painful sensation [15,16].

They are most frequently spotted in molars (the upper first molars). Based on the location, they are more frequently present in the coronary and less frequently in the radicular portion of the pulp with a predominating tendency to appear in the upper jaw teeth [4]. The distribution based on gender points to a greater prevalence in males, in both jaws, though according to some authors females are also affected, but without a significant difference [1,4].

4. Conclusions

With this study are confirm that dental radicular calcifications, can be with very different numeral prevalence.

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