# Studies On The Calcification In Interglobular Dentins

by PROF. C.H.CHANG

SUMMARY

As for the calcified state of interglobular dentin (globular area). it is not as definite as that of primary dentin. But what are its extent and relationship with a person's age? Adopting human's lower central incisors as experimental materials, and employing electron microprobe X-ray analyser and microradiography, I have achieved the following results in my research:

(1) a. From the fact that the average vickers microhardness of interglobular dention is 8.7, and that of surrounding dentin is 60.1, we know that the hardness of interglobular dentin is very low.

b. The microhardness of interglobular dentin close to dental crown is a little higher (harder) than that close to the cervical portion.

c. The microhardness of labio-interglobular dentin is a little higher (harder) than that beside the lingual.

d. The average of interglobular dentin of children of 10 is 6.0, while that of those between 40 and 70 is 6.9-16.0. Therefore, it can be proved that microhardness of interglobular dentin varies with age.

(2) a. As for the X-ray penetrating extent through the interglobular dentin is higher than through the surrounding dentin, there exists a remarkable definition between the two. However, the penetration through their interiors are not even.

b. As the structure of the interglobular dentin of old people has been condensed, the X-ray penetrating extent through it is also reduced. Consequently, the definition between their interglobular dentin and surrounding dentin is not remearkable.

(3) a. The microhardness of teenager's teeth is comparatively low, and the X-ray penetrating extent through their teeth is high. Thedensity of such elements as Ca, p, Mg, Zn, and Na, which compsose into their interglobular dentin is not as large as that of those elements, which compose into their surrounding dentin. On the contrary, the density of S, and Cl, scattered in the latter is very high, and the density of element N, is an unstable state.

b. The transparency and microhardness of the interglobular dentin of old people is comparatively large, and the X-ray penetrating extent through their interglobular dentin is comparatively low. The density of elements Ca, p. Mg, Zn, and Na, scattered in the dentin increase, while the elements of S, and Cl, decrease. The two kinds of densities in interglobular dentin are nearly close to the level of that of surrounding dentin.

c. The indensity level of surrounding dentin at both the margins and interior of the interglobular dentin of such teeth is very high, and large quantity of elements of Mg, Zn, and Na scattered therein may be found out.

(4) a. The percentage of dimension occupied by interglobular dentin in dental crown dentin is? %. That of lingual nterglobular is 0.556% in average, and that of labio is 0.311% This proves that the lingual dimension is large than labial dimension.

b. Based upon these dimension percentages, we know that those of teenagers are smaller than those of old people. That is interglobular dentin decreases by degrees with growth of age, and disappears finally.

(5) The suferficial ultramicrostructure of interglobular dentin of relatively low microhardness is composed of microfibrils and granules to from a rough suface, between which and surrounding dentin there exists an evident definition. The surface of interglobular dentin with a comparatively large microhardness is similar to primary dentin with a flat form. Its perimeter is of contant-junction.