



F9 Radiographic Disappearance of the Root Pulp in Wisdom Teeth: A New Method to Determine Whether Young Asylum Seekers are Below 18 Years of Age

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After attending this presentation, attendees will acquire knowledge of the radiographic disappearance of the root pulp canal and the reason for the occurrence. The potential application of this finding in age estimation of young asylum seekers will be revealed.

The presentation will impact the forensic science community by enabling forensic odontologist to prove with certainty that asylum seekers who pretend to be below 18 years are in fact above that age and also in most cases above 21 years of age.

From a group of 1,198 OPGs from 629 females and 569 males from 15 to 40 years of age, the visibility of the root pulp of third molars with completed root formation was scored according to stages 0, 1, 2, and 3. The SPSS program was used for statistical analysis and median, minimum and maximum, upper, and lower quartiles were computed for each of the wisdom teeth and for each gender.

The findings showed that for stage 0, minimum age was about 17 years for all teeth and gender. Median age was from 21 to 24 years. For stage 1, min age was above 21 years except for maxillary wisdom teeth in males. Median age was from 23 to 28 years. For stage 2 min age was above 22 years except for 18 for females where it was 21.9 years. Median age was above 30 years except for maxillary wisdom teeth for men where it was 29 years. For stage 3 min age was for females 24 to 25 years and for males 25 years, except for maxillary teeth where it was 21 years. Median age was 32 to 34 for males and 34 to 36 for females.

This phenomenon has not been described before and no research of the age distribution has been available.

This investigation shows disappearance of the pulp canal as it is seen in radiographs. This does not mean that the pulp is completely obliterated. It is proposed that it has become so narrow that compared to the rest of the hard tissue in the tooth and the surrounding bone it means so little that it is not longer visible on radiographs.

These findings indicate that for stage 0 with complete formed roots but visible canal to the apex an age below 18 years cannot be excluded. However, when the canal starts to disappear in one of the roots the person must be above 18 years and most surely above 21 years. For stage 2 and 3, the age can safely be stated to be above 21 years of age. The latter age limit is important in Germany as criminal law prescribe more lenient punishment if the person is below 21 years.

This method may be a powerful tool for the forensic odontologist in age estimation of young asylum seekers who pretend to be below 18 years of age as we now may make a more safe exclusion than before. Ethnic differences in the mineralization of the pulp canal have not been investigated, but it is reason to believe that such differences eventually may be of minor importance.

Age Estimation, Wisdom Teeth, Pulp Canal