

A radiographic study estimating age using periodontal ligament visibility of mandibular third molars

Mohtsin Chaudhary
Helen Liversidge

Corresponding author:
drmachaudhary@googlemail.com

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ABSTRACT

Visibility of the periodontal ligament of mandibular third molars (M₃) has been suggested as a method to estimate age. The aim of our study was to compare visibility of the periodontal ligament width in left and right M₃ and assess the accuracy of age estimation. The sample was archived panoramic dental radiographs of 163 individuals (75 males, 88 females, age 16-53 years) with mature M₃'s.

Method. Reliability was assessed using Kappa. Stages were compared between left and right M₃. Minimum age of stages was described. Accuracy was assessed by comparing estimated and chronological ages for males and females. Stages were cross-tabulated against age categories younger than and at least 18 years of age.

Results showed excellent reliability. The left and right M₃ stage differed in 46% of the 85 individuals with readings from both side. Minimum ages of stages 0 to 2 were younger than previously reported. Mean difference between estimated and chronological ages was 7.21 years (SD 5.16) for left M₃ and 7.69 (SD 6.08) for right M₃ in males and 6.87 (SD 5.83) for left M₃ and 8.61 (SD 6.58) for right M₃ in females. Only stage 3 in left M₃ could discriminate between males and females younger and at least 18 years of age.

Conclusion. These findings show that visibility of the periodontal ligament differed between left and right in almost half our sample. Ages of the four stages overlapped. Our findings question the use of this method to estimate age or to discriminate between age younger and at least 18 years.