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Mandibular ramus as dimorphic tool in age and sex determination: A cross sectional radio-anthropometric study on digital panoramic radiograph

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Objectives: This research article focuses on prediction of age on the basis of maximum ramus breadth, minimum ramus breadth, condylar height, projective height of ramus and coronoid height. (Linear regression analysis). However, it also determines sex of individual on the basis of discriminant function analysis using Fischer exact test using maximum ramus breadth, minimum ramus breadth, condylar height, projective height of ramus and coronoid height.

Materials & Methods: The orthopantomograms of 200 subjects were taken from Planmeca Promax-dimax4 OPG machine at 66 Kvp, 8mA and exposure time 16 sec. All the measurements are done on digital orthopantomograms using Planmeca Romexis 3.2.0R software. The measurements of the mandibular ramus will be subjected to discriminant function analysis.

Results: The study sample consists of 200 subjects aged between 8 to 82 years with a mean age of 38.21 ± 17.12 years. The

persons correlation coefficient (r) between age and minimum ramus breadth was not significant correlation however the maximum ramus breadth, condylar height, coronoid height and projective height were directly associated with age and demonstrate a significant positive relation in maximum ramus breadth, condylar height, coronoid height and significant positive relation in projective height. The maximum ramus breadth, min ramus breadth, condylar height, coronoid height and projective height values were greater in males than females. The difference in maximum ramus breadth, minimum ramus breadth, condylar height, coronoid height and projective height values in males and females were statistically significant ($P < 0.05$).

Conclusions: Mandibular ramus can be a useful tool for age and sex determination in forensic science. Thus, medicolegal cases having age and sex issues can be resolved with measurements of mandibular ramus if panoramic radiograph is available.

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