Effect of Age and Sex: Antegonial and Gonial Notch of Mandible

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Citation

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Abstract

The morphological change in the antegonial region has received little attention in literature. A few studies focused on the mandibular angle, its alternations throughout aging, and changing relation to dental status. Their results were variable and inconsistent[1,2], even using similar methodologies. Casey and Emrich[3] compared the changes in genial angle in patients who were edentulous on one side of the arch and dentate on the other side of arch. They found no statistically significant differences between the edentulous and dentate sides. They also compared dentulous and edentulous men using panoramic radiographs. Their results suggested a slight widening of the mandibular angle in the edentulous patients. The aim of this study was to evaluate the changes in the antegonial angle, antegonial depth and gonial angle in 10 to 45 years old age groups and between genders.

Panoramic radiographs of patients (M:F, 52:57), aged 10 years to 45 years from Oral Radiology Department of Government Dental College associated with Pt. B.D. Sharma Post Graduate Institute of Medical Sciences, Rohtak (Haryana) India, were examined. Only radiographs with good quality were used. Patient with fractures, post surgical and with any skeletal deformities were excluded from study. The examiner performed all measurements (in centigrade) with digital angle measurement instrument after tracing of parameter's.

The following measurements were made:

1. Gonial angle
2. Antegonial angle
3. Antegonial depth

The gonial angle was assessed by tracing a line tangent to the lower border of the mandible and another line tangent to the distal border of the ramus on both side. The intersection of these lines formed the mandibular angle. The antegonial angle was measured by tracing two lines parallel to the antegonial region will intersect at the deepest point of the antegonial notch. The antegonial depth was measured as the distance along a perpendicular line from the deepest point of the notch.

Concavity to a tangent through the inferior border of the mandible. The entire data collected was subjected to statistical an analysis by using computer software package / PC version 7.0.

Small differences were observed between left & right side and variability was also small. For the antegonial angle in males (1.63.5 ± 0.69) had significantly smaller values than females (167.5 ± 0.67) ($P<0.01$) and irrespective to age. No significant differences were observed for genial angle regarding age and sex. The antegonial depth was significantly greater for males (2.57 ± 0.33 mm) than females (1.59 ± 0.49 mm), $p < 6.001$, irrespective to age.

During an individual's life, the morphological changes undergone by the mandible are thought to be influenced by the dental states and age of patient. Muscle function should preserve the bony structures of the genial angle and symphyseal regions, irrespective of dental status and age related remodelling of the mandible. However, the genial angle is though to increase with age and also widen with the edentulous state.[3]

In conclusion, the genial angle did not show any change with gender and age whereas the antegonial region angle in males has significantly smaller values than females irrespective to age. The antegonial depth was significantly greater for males than females irrespective to age. It may due to hormonal

differences affecting bone metabolism.

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