

LETTER TO EDITOR

The Prevalence of Mandibular Residual Alveolar Ridge Patterns in Adult Edentulous Population

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Sir,

The residual alveolar ridge is a basal jaw bone and soft tissue covering left after teeth loss. The alveolar ridge constantly resorbs and goes through a series of changes, into different shapes throughout life¹. The remodeling of residual alveolar ridge affects the prosthodontic treatment in its different phases². Therefore, during treatment planning, it is essential to consider the quality and quantity of bone. The ridge pattern varies in edentulous patients, which directly affects the denture-bearing area, facial muscle support, retention, stability, and function³. Atwood⁵ in 1971 classified the mandibular ridge form into six anatomical orders. The classification, which is in practice and is widely used, was based on topographic analysis of residual alveolar bone⁴.

Class I - Pre-extraction, Class II - Post-extraction, Class III - High, well rounded, Class IV - Knife edge, Class V – Low well rounded, Class VI – Depressed.

The evaluation of Atwood⁵'s ridge order to date has not been carried out to the best of authors' knowledge. Therefore, a need of evaluating ridge form exists as it is yet unknown that the classification incorporated in curricula is valid or a need of new classification or modification in the existing one is needed. In a pilot project of 105 participants, we have clinically evaluated the prevalence of residual ridge form according to Atwood⁵ classification and studied its correlation with period of edentulism, previous denture use and age. The ridge morphology was judged clinically, and height of the ridge was recorded further from Orthopantomography (OPG) and lateral cephalography.

Considering the methodologies implemented in our study, it was concluded that the most prevalent ridge form was order V 27 (25.7%) and VI 28 (26.7%). Additionally, order VI was also found in majority with diabetes 22 (20.95%) and osteoporosis 17 (16.19). The

depressed form was found in females 17 (16.19%) while low well rounded was prevalent in males 15 (14.29%). However, we found that the residual ridge form becomes unfavorable with period of edentulism ($rp = 0.845$), ($p < 0.001$) and advancing age ($rp = 0.655$), ($p < 0.001$). While a weak relationship ($rp = 0.479$), ($p = 0.003$) of ridge form was found with denture use. Beside this, we also detected shortcomings in the current ridge classification in terms of difficulties encountered in management of ridge order like encroachment of inter arch space with well-formed ridge type, lack of morphological details, lack of quantitative measurements of residual alveolar bone, and why certain ridge orders like V and VI are suggested because there is no difference in treatment planning. Therefore, we recommend a modification in the current classification according to complexities in treatment and logical sequence with additional details of residual ridge forms.

Conflict of Interest: Authors declare no conflict of interest.

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