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Comparisons of soft tissue chin thickness in adult patients with various mandibular divergence patterns

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Objective: Evaluate the association between soft tissue thickness at the chin (STC) and mandibular divergence.

Materials and Methods: Non-growing patients seeking orthodontic treatment(n=190; 113 females, 77 males), whose average age was 26. 94 years (range:18. 10-53. 50 years), were stratified in 4 subgroups based on cephalometric mandibular plane inclination to anterior cranial base (MP-SN): Low(L): MP-SN≤27°, n=48; Medium-low(ML): 27°<MP-SN≤32°, n=60; Medium-high(MH): 32°<MP-SN<37°, n=37; High(H): MP-SN≥37°, n=45. STC thicknesses were measured at pogonion (Pog), gnathion (Gn) and menton (Me). Group differences were evaluated with one-way analysis of variance (ANOVA) and Student's t-test as indicated. The Pearson correlation product moment gauged associations between parameters.

Results: STC values were greater in males than females (P<. 02) and smaller in group H (7. 47±2. 42mm) than all other groups at Gn (mean values; 9. 00mm<STC<9. 58mm; P<0. 001) and at Me (D: 6. 30±1. 89mm; other groups: 7. 15mm<STC<7. 57mm; p=0. 011).

Conclusion: STC at Gn and Me is thinner in hyperdivergent facial patterns, apparently in contrast to pogonion. This differential thickness warrants focused research as it implies 1-the possibility of vertically growing hard tissues impinging on the inferior soft tissue envelope in patients with severe hyperdivergence, and 2-planning genioplasty in such patients, whereby more advancement of the chin might be needed to compensate for the increased vertical height.

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